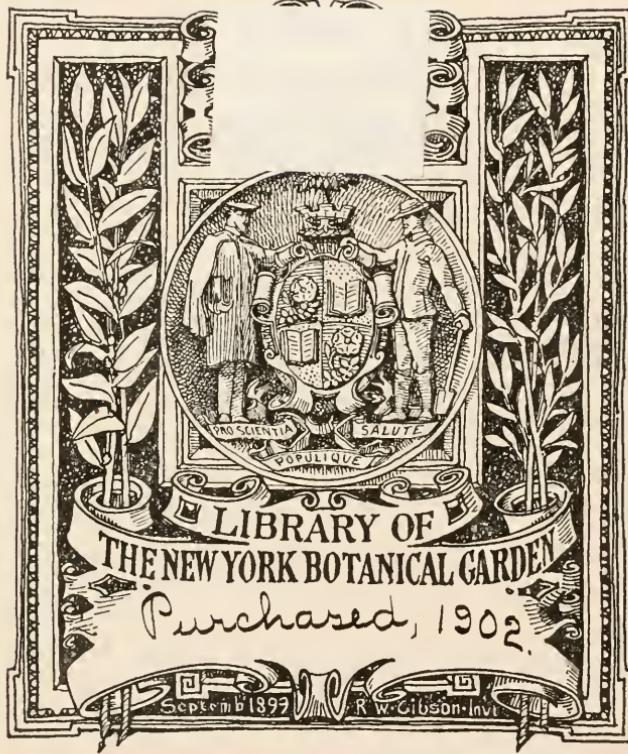


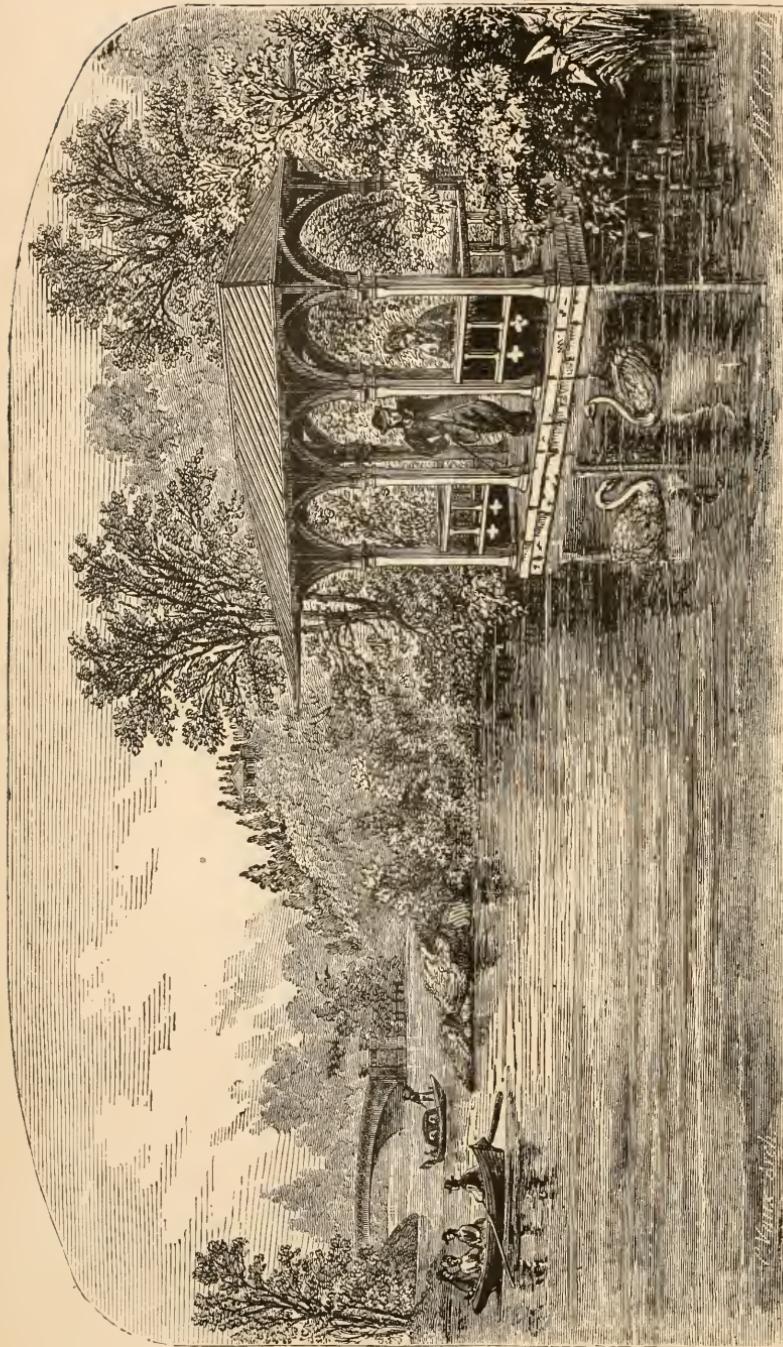


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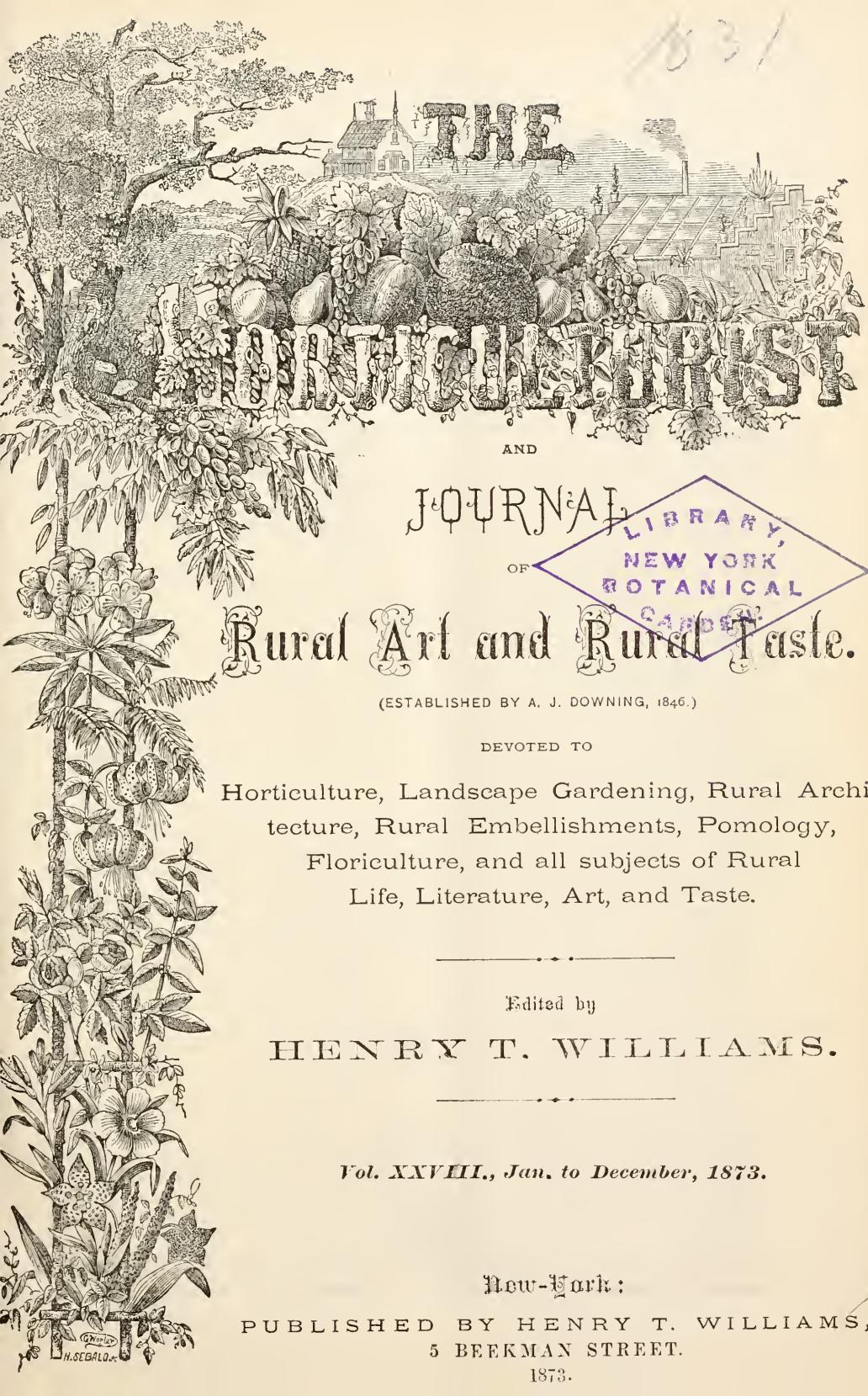
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NO. 319.

The Southern White Fig, Croton Grape, etc.

ON page 339 of the November number of the HORTICULTURIST is a notice of the fine figs of the shore of the Gulf of Mexico. It is a little over a year since, in lecturing on fruits to the senior and junior classes of Massachusetts Agricultural College, at Amherst, Mass., I said that I had seen on the Gulf shore thousands of acres of unoccupied sandy loam land where this fig grows in great luxuriance, and produced two and sometimes three crops of fine fruit each year; and that among the unoccupied industries of the South, I thought this one of preparing this fig, as in Smyrna, for European and Northern United States market, was one of the most promising. I am glad that this opinion finds another advocate. I have seen lands that would not grow cotton or corn, planted with large magnolias and figs, trees often larger than the apple tree of the North.

What is needed is that suitable examination be had by some competent person familiar with the method of preparing the Mediterranean figs for boxing and market, and experiment be begun, and the art be learned how to manufacture the now abundant figs into the sweet and dried article of commerce. Certainly lands that grow trees that twice a year cover the ground beneath them with delicious figs, when grown without care, ought with culture and care to produce them by acres, and a process of drying be had that will put tons on tons on the market. If anything is known in the Mediterranean, it were easy to know it here. As grape leaves, and especially seedling variety leaves, this were an easy matter to explain. The culture better begin with the best figs of the whole world.

The Croton Grape.

When in Washington a few weeks ago, I saw a few late-hanging and long over-ripe Croton bunches. As grown there the bunch is quite large, the berries fair in size, and the grape worthy of praise every way. Those grown on the grounds of the Agricultural Department, too, were still in a few instances on the vines, and the employees spoke well of the grape. Thus I am disposed to commend it.

Mr. Tucker, of this place, early abandoned all of his Rogers' Hybrids as worthless, in such a season as this, after the hail storm that cut to pieces the new leaves and fruit. Yet November 10th, bushels of No. 1, 15, 3, 9, 41, etc., were on the vines. I picked a couple of bushels. And I have rarely eaten them as I have now ten days, with such pleasure. The fruits have sweetened and mellowed there, and they are as delicious as Malagas. As I have often before said, December and January are the months for Rogers' No. 1, and November for Salems and some other of his numbers.

Ferns.

The transplanting of ferns, and their growth after transplantation, is quite an easy matter. The ravine just north of Cornell University is full of them, as are the ravines of the Cayuga and other lake regions. It is fortunate for us that they do not in all this rich, wheat-land region, grow to our annoyance in pastures or open lands, as they do in New England. The roots and soil about the roots removed with them, ferns become beautiful objects for globe and other glasses and glass covers, and easily keep all winter. There are students and others here whose display of them and the green and white mosses of Buttermilk ravine are quite commendable. We have also seen them planted on the north side of houses, where they grow in ornamental beds and become admired pets of the family. We believe they are as healthful as any other plant.

Climbing Ferns.

These for the northern part of the United States are few. The five-parted fern, climbing in New England trees, and other objects, as near Hartford, and in a few places about Springfield and Amherst, is the best one familiar to us. But the climbing ferns of the tropics and other parts of the world are numerous. Quite a number are to be seen of them under the care of Mr. Sanders, of the Agricultural Department at Washington, amid the other tropical ferns of the new plant house.

So we divest, little by little, these plants of the superstitious fears of disease or ill, and behold in ferns the beauty of their admirable structure.

Water Cress.

We notice this plant (*Nasturtium Officinale*) in the cold spring waters of Northern New Jersey. It is also in the cold springs at the south end of the Cayuga lake, N. Y.

Mr. Sanders, the long known and highly esteemed curator of plants of the Agricultural Department at Washington, D. C., says the Walter was one of the best there this season.

Pear orchards on the Cayuga lake, N. Y., paid well this year, as they did last. New York and Philadelphia are the best markets for pears.

Cannot some potato cultivator give us views of the best new potatoes?

The secret of no potato rot is to plant no sort over ten years old—that is, ten years since it originated from the seed. England and Ireland neglected this, and hence its rot this year. Please tell them so, Editor of HORTICULTURIST.

S. J. PARKER, M.D.

The Central Park Illustrated.

FEW of those who visit the Central Park are really aware of the many gems of scenery and architectural ornament contained within it. They pass through it too hastily, and go over only the broader and more commonly frequented paths. If you will spare the time, and step aside into by-paths, and over the vine-covered rocks, or shrubby knolls the pleasure-seeker will find some choice bits of scenery, rustic bridges, pools, fountains, waterfalls, and the most exquisite of verdured copses. The Lake naturally affords the best water views, and gathering around its shores are a hundred beautiful, but varying sketches of scenery, or specimens of bridges and rustic work ; one of these, a charming view of a boat-house on the lake just west of the Central bridge, is illustrated this month in our frontispiece. There are five or six other boat-houses of picturesque outlines, scattered around the Lake, as well as several broader landings near the terrace at the head of the Mall. The Lake, as seen on some bright summer day, with gaily decorated boats, flags of brilliant colors fluttering in the breeze, and graceful swans sailing with dignified and measured strokes, and the shores and surrounding paths lined with happy visitors, make a picture of rare rural beauty. We shall continue the publication of other Central Park sketches, frequently, the coming year.

Good News to Florists.

THE obnoxious law, relating to seeds, plants, etc., passed by Congress, last summer, concerning which so much gossip and criticism have passed the rounds of the press, in relation to seeds, has been repealed, and the old law now practically stands as it did last winter. We quote the following extract from the *Rural New Yorker* of December 28 :

“ **POSTAGE ON SEEDS, BULBS, ROOTS, ETC.**—Our readers will be glad to learn that both the Senate and House of Representatives have passed a bill reinstating the old rates of postage on seeds, bulbs, roots, plants, etc., for which there has been so much clamor of late in consequence of the rulings of the Postmaster-General. The amendment passed permits the passage of four-pound packages through the mails, as formerly, at the postal rate of two cents for four ounces. The act is to take effect immediately; but it will not take effect unless the Postmaster-General is pressed to send instructions at once to the postmasters of the country directing its enforcement; for postmasters cannot act without instructions, and the issue of these is often delayed months after an act of Congress goes into effect, such is the red tape machinery of the Department.”

It would have been still more convenient had the rate been fixed at one cent for every *two ounces*, thus allowing more economical subdivisions than the other rate of two cents per four ounces; but we are glad enough to have the law returned and made available thus quickly for the coming seed season.

El Espíritu Santo.

IN 1826, Henry Barnard, Esq., then residing in Truxillo, Peru, sent to Richard Harrison, Esq., of Liverpool, England, the bulb of a remarkable eparasitical, orchidaceous plant, which he had found in the neighborhood of Panama, where it was looked upon with much consideration, and known as *El Espíritu Santo*—the Holy

Spirit; but which had never been seen in the conservatories of Europe. The bulb was properly cared for, and soon began to put forth leaves, but leaves only, until 1831, when it shot up its first flower stem, which sprang from the base of the bulb, while its leaves grew from the summit.

It was not until the blossom appeared that the significance of its local name was apparent. When the flower had fully opened, a most singular and beautiful appearance was presented. The fructifying column in the center of the flower, with its surmounting anther and the projecting glands of pollen-masses were observed to present a striking resemblance to a dove—the emblem of the third person in the Holy Trinity. Hence the name, *El Espíritu Santo*—the Holy Spirit—was reverentially applied by the native residents, from the same religious feeling which had prompted the name of the “passion flower.”

The form of a dove assumed by the parts of this flower, as described above, are remarkably true to nature. The breast, the extended wings, the head and beak, and



Espirito Santo—Holy Spirit Flower.

even two purle dots for the eyes, are all distinctly shown, and almost as true to nature as the art of man can depict them.

Owing to the great heat required by this plant, and its peculiarly delicate construction, it has been found very difficult to cultivate it, artificially, away from its native region, which is comprised within the central portion of the torrid zone of the Western Continent.

Some two or three years since, as Mr. Shuman, the chief florist at Woodward's Gardens was crossing the Isthmus of Panama, he took the opportunity to make a collection of some of the most characteristic tropical plants obtainable in that locality, and among others was a specimen of the *Espirito Santo*, whieh still occupies the portion of the native wood upon which it was found—for it is a semi-parasitical plant. Under the excellent care and management of Mr. Shuman, with the very superior facilities furnished by Mr. Woodward, the proprietor of the gardens

for the cultivation of tropical plants, this specimen, after continuing in vigorous growth for two years, threw up its first flower stem which was duly covered with a most gorgeous show of flowers. It subsequently bloomed a second time, last fall.

Both the flowers and leaves, with the distinctive dove representation within the center of one of the flowers is shown in the accompanying illustration, which has been engraved from a photograph taken of the same while at the height of its show. The bulb, from the tops of which the leaves grow and from the base of which the flower stem springs, is not shown; but the leaves, flowers and upper portion of the flower stalk is distinctly shown.

Five leaves spring from each bulb, from twenty to thirty inches in length, by five or six in breadth—lanceolate in form. The flower stem grows from three to four feet in height, bearing upon its summit a spike of globose, fleshy, yellowish-white flowers, yielding a very peculiar and delicate perfume.

The flowering of this plant attracted much attention and a large number of visitors to the garden last season. It is expected that it will flower again this season. A carefully prepared representation of the flower was made in wax, at the time, by Mrs. A. O. Cook, of 304 Mason street, which may be seen in a small vase just to the left of the front entrance to the rotunda museum. Copies of the same have also been made, and are in possession of several persons in the city. In its native clime (Central America), this plant blooms just at the commencement of the rainy season, and, of course, just after its annual period of rest. The flowers hold on about one month. It is now known to botanists as *Peresteria alata*, and is figured in vol. 5 (new series), of *Curtis' Botanical Magazine* (No. of Engraving 3,115). The plant belongs to the order of *Orchidaceae*, a class of plants of wide distribution, occupying in some of its varieties almost every portion of the earth from the equator to almost the extreme northern and southern limits of the poles. It is only, however, as we approach the equator that the varieties of this plant assume peculiar or beautiful forms. There, owing to the peculiar condition of the column, the anther containing the pollen, and the often remarkable development of some one or more of the inner leaves or petals into unusual forms, the flowers frequently take the most singular and sometimes beautiful or fantastic forms. An insect, or a spider, a butterfly, etc., sometimes a bird, as in the *peristeria alata*, not unfrequently a reptile, and sometimes a helmet with visor closed or raised, and often other singular and most beautiful forms are seen.

Sometimes there is a peculiar sensibility connected with the flower, which makes it a most effective insect trap, so hinged that it immediately entraps and holds fast any insect which may alight upon it, when its size is sufficient to enclose such intruder.

The particular specimen at Woodward's and which is herewith figured, is a pseudo-bulbous epiphyte plant—having the appearance of a bulb, but not a real bulb, and growing upon other plants but not penetrating their substance, nor absorbing their juices, as is the case with a real parasite. This variety is also sometimes found growing upon rocks or upon the earth, generally choosing dry, hilly localities. It grows well artificially in turf peat or rotten wood. It is thus kept at Woodward's, where it is seen in a rustic hanging-basket.

S.

San Francisco, Cal.

American Gooseberries.

BY H. E. HOOKER.

THE gooseberry has never assumed a very important position among American fruits, because attention has been given mainly to the foreign sorts which do not prove well adapted to our climate; some of these foreign sorts are of fine size and good quality; there is also a variety differing in size, color, habit of growth, and other characteristics, giving a valuable and agreeable diversity and adaptation to numerous uses.

The superiority of foreign sorts is due to the efforts of cultivators in securing new and improved varieties by raising numerous seedlings, and then saving and multiplying by cuttings, and disseminating the best. This has been done until there seems little more to be desired from these foreigners, except adaptation to our climate; and this difficulty I believe to be insuperable. So long as we adhere to those raised from seed grown abroad, and adjusted by nature to a different climate from ours, they may give pretty good results occasionally, but as a whole they will disappoint us.

The general public will derive small benefit from the gooseberry until we produce from seed of the wild American stock, or crosses with it, a multitude of new individuals from which to select and propagate those having the qualities we most desire and of special value to us.

I was struck with the fact that we had accomplished very little yet in improving this fruit, by finding, on the coast of Maine, an abundance of wild gooseberries with fruit nearly as large and good as the Houghton; these were growing without care from man, among rocks and in poor soils. If we have stock as good as this to start with, it does not speak well for us that we have thus far done so little to secure superior varieties adapted to the wants and tastes of our citizens.

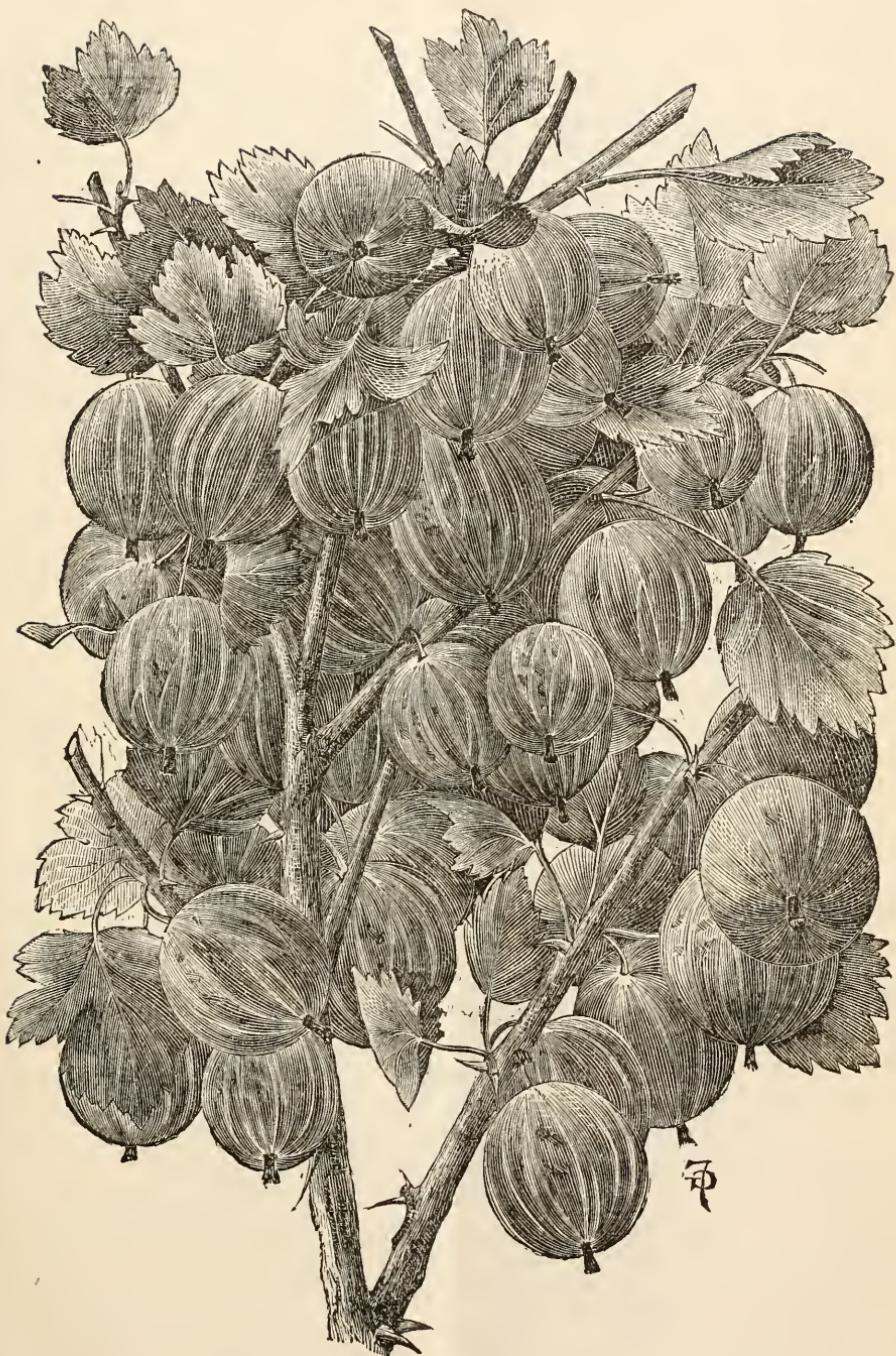
Experience with other fruits shows that we must look to native grown *seedlings* for our most excellent and profitable sorts. Little can be done to change or modify the constitution of a plant by special care or culture; we must go to the *seed* for all reliable variations; and when any disposition to vary from the original wild type is discovered, we must follow it up, and, in the end, secure the results most desired.

So far as I know the gooseberry has not in this country produced many new and promising variations; it has held well to the habit of all wild fruits: not to show much change, until, in the hand of man, those conditions are secured which give safety to, and use for, individuals whose merit is not so much in hardihood of constitution, as beauty, abundance, and excellence of fruit. None of our best cultivated varieties of fruits would survive for a single century, if a wilderness were again to overspread the land, and the fruits be left to contend with the wild condition of things.

The only improved American Gooseberries which have come under my observation, are the following:

1st. The "Houghton Seedling."—This strongly resembles the wild type, but is more productive, somewhat larger, and better flavored than those found growing wild, retaining the vigor and hardiness of the original.

2d. The "Mountain."—This is very different from the first, and offers peculiarities of merit quite distinct and interesting. The plant grows tall, and very large, abundantly productive of fruit varying from large to quite small upon the same



Smith's Improved Gooseberry.

branch; with a tough skin, wild flora, and disposed to hang long upon the bush. Both this and the Houghton, are *red* in color.

3d. The "Smith's Improved."—This variety presents the habit of growth, slender branches, and moderately rapid growth of the Houghton, with much larger fruit, of a pale yellow or greenish yellow color, and excellent flavor, thin skin, and excellent table and cooking qualities. More vigor of growth in this sort would be desirable; its disposition to be a very heavy crop of fruit being prominent.

I am inclined to think pruning and liberal culture will suit this variety, and with these, I do not see how it can fail to please. The accompanying cut was correctly drawn from a well grown plant in full fruit.

4th. The "Downing."—This sort grows more in the style of some of the foreign varieties, but with much greater rapidity and vigor of root and branch. It has stout heavy wood, very thorny, and with an abundant rich foliage, which, in our grounds resisted all disease, and held on with remarkable persistence, until severe freezing removes it. This heavy foliage proves of value to the fruit, not only in the certainty of maturity, but by shielding it from sun scalding, which sometimes injures other sorts.

I cannot say that I have found the fruit of "Downing" any great improvement in flavor over the "Houghton;" but it is twice as large, and the pale green color is preferable, as most of the gooseberry crop is now used for various cooking and canning purposes: it will, I think, be found that its increased size, remarkable vigor and productiveness, good color and certain crop, will place it among the real acquisitions in this fruit.

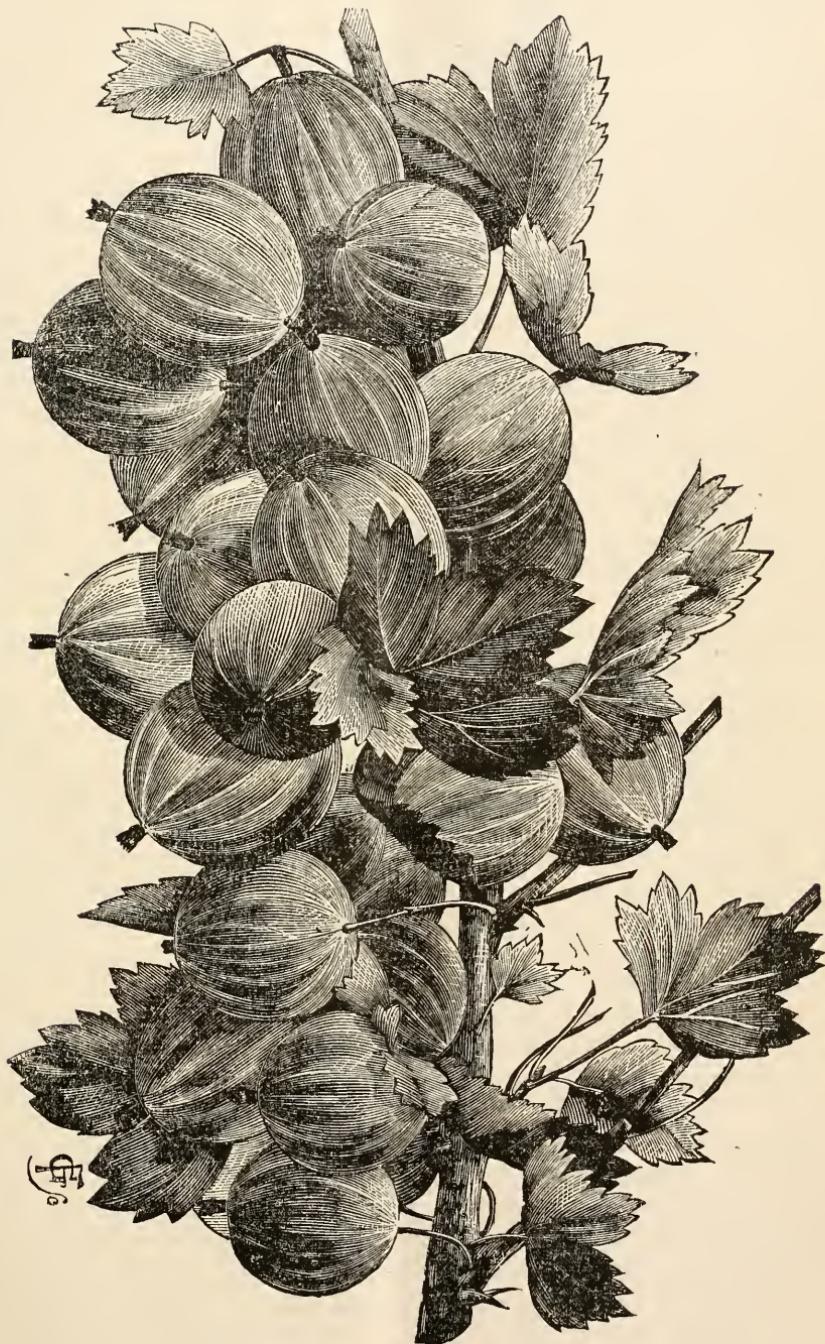
I look upon these new sorts as additions of real merit in themselves; and a strong assurance that from their progeny, we may reasonably expect soon to see a list of gooseberries possessing all the good qualities of the foreign sorts; with the added recommendation, that they are perfectly adapted by nature to our climate. When we have these improved sorts, we shall find an extensive use, and enlarged market for the fruit now so little valued.

Careful observation of the result of crop-breeding by artificial fertilization in plants, shows that in every case a really *new individual* appears, in fact a new creation from the hand of the Divine architect, whose thought and power to produce infinite and pleasing variety out of seemingly common material appears; and every time we rely upon Him to give us useful results for our care and labor, he is pleased to respond; slowly perhaps, but really; there being no limit to his resources, there will be no end to the variety, the beauty, the interest, and the improvement which we may reasonably expect. Changes from old forms are sometimes slow, and family traits hard to eradicate, but they will appear in due time if we are wise, patient, and industrious in pursuing our work.

When a man takes *tools* in hand, and attempts to work a plant up to his idea of what it should be, he may partially or wholly succeed in illustrating a human thought, as men do who prune, train, and hedge; but when he goes to the *seed form*, and carefully develops by culture, and by giving favorable conditions to the individuals, which the Creator has designed, he may fairly expect to see developments of beauty and value, as much beyond man's work, as God's thoughts are beyond and above our thoughts.

Rochester, N. Y.

The New American Gooseberry 'Downing.'



The New American Gooseberry 'Downing.'

Public Grounds Especially Adapted to the Culture and Exhibition of Subtropical and Flowering Plants.

BY ROBERT MORRIS COPELAND.

THERE are many opportunities for using tender and subtropical plants where the cost is of little consequence, that is, for the decoration of public grounds. Many persons thinking that trees only are suitable for public places, as they give shade, and are too high to be injured by carelessness or mischief, they would use few shrubs with the trees, and only those that are perfectly hardy. They would plant their trees and shrubs in a very formal way, preferring rows or lines to any groups or irregular combinations. They think that public grounds ought only to be used for play grounds for children, parades for firemen and soldiers, and for promenade. They would permit a music stand, or a fountain, but would prefer to have everything as simple and as little decorated as possible. They believe in this kind of treatment, because they fear that the spirit of mischief will induce the public to break or steal flowering plants, and that the cost of watching, or replacing injured shrubs or flowers, and the vexation that must follow their injury, more than offsets any pleasure they can give. The most of those who reason in this way, do not understand the beauty of variety and irregularity. They are sufficiently cultivated to appreciate neatness, order, and geometrical harmony, and, perhaps, the beauty of contrast, but they do not feel the pleasure which comes from contrasts, and the harmonies which are the result of combining and contrasting trees, shrubs, and flowers, and they cannot be induced to consent to a trial of any methods of laying out, and planting grounds, different from those they have always seen.

Other persons, again, who enjoy thoroughly all the beauty, variety, and pictur-esque ness of any kind of landscape, and who would consent to any irregularity or massing of plantation, which would give a good effect, are very much opposed to the introduction of flowers, or any of the subtropical plants into public grounds, whether small or large, on general principles. There is a story told of a wealthy parvenu of Boston, who had a poor brother. The rich man gave a party to his peers in wealth, and when one of them asked him during the evening for his brother, and expressed his surprise at not seeing him, the host answered: "Ah, yes, he is not here. I didn't invite him; you know we must draw a line somewhere."

Those who would prevent grouping of trees and shrubs draw their line of ornamental vegetable decoration at perennials and tender plants. They admit that the fears of their conservatories are misplaced, that there is no danger that the public will injure or steal anything, but lest the space may be crowded, the ball and parade grounds be circumscribed, or a larger gardening and police force be necessary, they would omit in public places, all but trees and hardy shrubs, and introduce the latter sparingly. I disagree with them entirely. Public grounds are for the public, and they should appeal to all sides of the mind, and offer opportunities for amusement to those who love flowers, and are too poor, or busy to cultivate them, as much as to boys, firemen, soldiers, and promenaders. If a village or city can afford but one public common, or square, and that too small for anything but a ball or parade ground, I think it should have the preference, and not risk the beauty of

flowers with soldiers and cricket balls. But any city or town which has but one such piece of ground ought, as soon as possible, have another, either large enough for all the purposes for which such grounds are useful, specially devoted to floriculture. Some thoughtful persons believe that the French example has injured even the English practice. Paris, re-made, is full of squares and small parks, which are devoted very much more to floral and shrubby display than to the other public uses, and boys and girls can demurely trundle their hoops, or play at marbles, and well-dressed men and women may stroll leisurely about. In such grounds the boisterous games of children are impossible, and there is no good place for parades of troops, firemen, and other public bodies who are driven into the streets or suburbs. Some of the great English parks in London, where, for years, oaks, beeches and elms have stood on wide lawns, dotted over beautiful meadows, or shading pretty streams and sheets of water, have been affected by the French example, are said to have given too much of their open lawns and meadows to subtropical plants, which require a host of gardeners and a corresponding cost, without a proportionate return in beauty or pleasure. If this is true, it is a pity; but we need not follow a bad example. Let us take as an illustration a square of four or six acres like so many of the squares in Philadelphia, now laid out with a circle round a central flag staff; walks radiating from the center to each corner, or else to the middle of the sides; the radiating paths connected at their extremities, within a few feet of the fence by a broad walk, which is parallel to the boundary all the way round. The sides of all these paths, planted with trees, whether good or bad varieties, is no matter, all is made rectangular, formal, uninteresting, dreary, in summer very shady, almost damp, cheerless in winter, totally devoid of any kind of variety, unless a chance snow or ice storm loads the branches with fleecy beauty for a few hours. This is, in a general way, a description of all the public grounds in America—I mean the small city and town areas. If the space under the trees, and between the walks is wide enough; if the city gardener will permit his perquisite of grass to be trodden down, boys may play on the turf, or troops parade there, but there is no more freedom in such squares than in a school-room. In such a place, shrubs and flowers would be a nuisance, and, indeed, could not live if planted, but the system is entirely wrong. Supposing such a square to be laid out, with strict regard for all public uses, a large unshaded area by itself for a play and parade ground, several smaller spaces for lawns, the trees gathered in the corners into groups, that with shrubs may partly conceal the play grounds, and fringe the lawn, and fill the bends in the paths. In the quieter parts of the square, there might be groups of subtropical or foliage plants, which should come in between the shrubs and the lawn and flower beds. Laid out in this way, all the economical and social necessities of the square would be met, and every one find there the pleasure best suited to his tastes. We need not discuss the advantage or pleasures of flower culture, nor dwell on the humanizing effect on man in all social condition of floral or other beauty; it is admitted, and the only question is: can the pleasure of flowers and decorative plants be enjoyed by the public economically and safely? The safety from plunder and destruction is assured by the experience of European cities, and of New York and Boston. The Central Park has no particular floral treatment, but there are blossoming shrubs in

profusion, and the Boston Public Garden is full of flowers, and no one has been found doing any serious damages as yet, nor will they in the future, if the public is taught to understand that whoever robs or injures the plants and shrubs, is actually doing a greater harm to himself than to any one else. The argument of fair play is more likely to affect a promiscuous crowd than any force. There are always some sneak thieves who will despoil anything, if they can thereby fill their own pockets; but the sneaks are few, and can be soon detected and punished, and every honest person is a policeman who will be eager to preserve public property, just in proportion to its beauty.

The introduction of flowering tender plants into public grounds, will certainly make greenhouses for the winter preservation important, but the cost of greenhouses can well be borne, if we thus secure in every town a place where the winter beauty of plants can be seen and enjoyed, and thus give the people an additional means of enjoyment.

More About the Big Pears.

THE following letter was received a short time after our visit at Mr. Leighton's place, which gives some further description about Mr. Leighton's orchard:

EDITOR HORTICULTURIST: After your departure this afternoon, it occurred to me that in our hasty walk through my orchard that some, or at least one variety was overlooked, and that one was the *Seckel*. It grows much larger here, perhaps, than in any other locality on the Atlantic Coast, and has proved itself healthy as a standard many years with my neighbors, and so far with me both as standard and *dwarf*, is vigorous.

I think I was imprudent in speaking so highly of *Clapp's Favorite*, for I have fruited it only two years as dwarf, and not at all as standard, and do not know when it will come in as standard.

The impression south of me is somewhat unfavorable as to its success, and I would not like to mislead on my slight experience.

I also forgot to speak of the *White Doyenne* (known thirty years ago as *Virgalien* in New York), has fruited three years without producing a single cracked specimen.

A pear tree near my barns, and which I remarked, was described in THE HORTICULTURIST, is Poire de l'Assomption; but I was mistaken, it is described in *Tilton's Journal of Horticulture*, and the pear trees shown you as Souvenir du Congress. I refer you to vol. 24, No. 278, page 235, HORTICULTURIST.

I enclose a short article which I wrote a year ago for the *Southern Planter and Farmer*, in answer to the numerous questions asked about my method of raising such large pears:

I plant my dwarf trees twelve and a half feet apart each way (perhaps 12½ by 14 feet would be better for Duchesse d'Angouleme), digging my holes about three and a half feet square and three feet deep. My land is overlaid with stiff blue clay from three to seven feet in depth, under which is sand.

In order to make underdrainage perfect, I bore with a post auger a hole from the center of the three feet hole down to the sand, and fill said auger hole with oyster shells, adding about a bushel in the bottom of large hole. I then add about six

inches of finely cut brush (hard wood), then fill up the holes with top soil mixed with a compost of muck, woods earth and lime—say six parts of the first, five of the second, and one of the latter. Should the muck be fresh I would add one-half part of salt. I regard the salt as indispensable. There is much of truth in that old Scotch saying, that “muck is the mother of the meal chest.”

I find the above compost excellent for clover as well as pears.

In planting my trees I endeavor to have the bunch at the joining of the pear with the quince about two inches below the level of the ground.

No crops are allowed among my pear trees excepting occasionally the black pea, which I plant as a fertilizer; and even when I plant these, I adopt the clean culture system until the first of June.

Few persons are aware of the sensitiveness of the pear tree, of its prompt response to generous treatment, or its pining at neglect.

Of all the pear food robbers, I place strawberries at the head of the list.

Persons who have not the courage and disposition to spare the land and keep it thoroughly cultivated, should not embark in the business of pear culture, for loss and disappointment only await them.

I have avoided barn-yard manure among my trees, either in planting or after culture.

Finding the trees so healthy and vigorous under the treatment of the compost first named, that I shall not make any change excepting when the trees come into full bearing, when I shall add bone and ashes for fruit food.

In short, the following are requisites for successful pear culture in Eastern Virginia :

1st. Perfect drainage.

2d. Stiffest clay soil.

3d. Proper planting of the trees.

4th. Clean culture.

5th. Healthy trees (which can be had of responsible nurserymen direct, without the intervention of an agent; and imparting the satisfaction of having every tree true to name).

6th. Timely supply of proper food for growth of both wood and fruit.

7th. Determination, patience, and sufficient of the sacrificing spirit to remove all fruit until the tree has sufficient wood to sustain it without checking the wood growth.

8th. Judicious pruning (better none than too much).

9th. Careful picking, packing, and handling of the packages.

10th. The right kind of an agent to dispose of them.

Norfolk, Va.

G: F. B. LEIGHTON.

Sequel to my Service Tree.

ENCLOSED I send you a few autumnal leaves from my Service Tree. Although confined to a sick room now for a few days, these leaves look so beautiful to my eyes, that I could not forbear stepping on to my front stoop, and stretch out my hand and pluck them for you. If your wife, or any lady friends, want patterns for artificials, to trim a winter hat, I commend these leaves, especially their exquisitely rich colors.

S. FOSTER.

The Horticulturist.

THE October number of THE HORTICULTURIST is this day received, and its contents glanced at, which appear full of valuable instruction; its field is broad and open, its success is sure while thus conducted, and I trust will prove profitable to both publisher and readers.

Our pear crop is harvested, quite light; grapes all gathered, below medium in quantity, but above in quality; apple picking brisk, crop a good one, far above average, except in the North part of the State; and instead of 106, as Agricultural Department had it for July, I would now put it 112.

S. FOSTER.

Violets.

BY ROBERT J. HALLIDAY, BALTIMORE, MD.

HAVING been asked to reply through your columns which is the best violet and our manner of growing the same, I respond as follows:

We have grown them profitably for the past fifteen years for their bloom. We plant in cold frames of well prepared soil about the end of September, say two thousand plants, these commence flowering two weeks after removal; from the 1st of November to the 1st of February, we pluck from fifteen hundred to two thousand daily. After this the sun becomes stronger, and they flower more abundantly, until about the 1st of April, when they cease. The sash are then removed to allow the plants to grow and harden before we separate them; about the 1st of May we take the old plants up and divide them, making say from ten to fifteen out of each, or as many as we can get with good crowns and roots—tops and roots cut back like strawberries, and then planted in open field in good rich soil.

Start your plants early in spring, so that they may be well established before the summer droughts commence. Artificial heat is not required to bloom the violet; bank your frames well with leaves or manure, cover early in the afternoon in severe weather with mats, salt hay, etc. Here is where so many fail in growing them; they do not keep them warm enough at night.

Best Violet for Forcing for Winter Bloom.

We have always considered the old *Neapolitan*, the best and most profitable for flowers until this season; color blue double, very fragrant and profuse flowerer.

Maria Louise—This new variety we have had for the past twelve months, but never fully tested until the present season. It surpasses all others, equally as fragrant as the former variety; color rich, deep, bluish violet, often with a red streak through center of flower—for the cut flower trade it has no equal. Six flowers of this variety will go as far in the making up of a bouquet as fifteen of the *Neapolitan*s. We have them flowering now in great perfection. The runners of this variety flower abundantly, and should never be cut off, as they are in other varieties.

Czar Violet—Have never grown it extensively, color too dark, and flower single, which are both against it for the flower trade.

Neapolitan Alba—(Double white) poor flowerer.

King of Violets—Double large, deep blue.

Shoenbrun—Single blue, very profuse.



New Violet. Marie Louise.

Experimental Strawberry Garden.

EDITOR HORTICULTURIST: In the last two years I have collected and planted at E "Woodburn Farm" (near Columbus, Ohio), some fifty of the newer varieties of strawberries, chiefly for the purpose of testing their value as to growth, hardiness and prolificacy in the soil and climate of that region. Some of them are well known in many sections, others are new American seedlings, and a few are recent importations from abroad by the Agricultural Department, whence I obtained them. They were all planted two feet apart, in rows four feet asunder, so as to permit of horse cultivation, and they have been kept reasonably clean and runners cut by running a small plow occasionally between the rows. The soil is clay-loam, surface-drained. Last December the rows were all covered with straw, as a winter protection, but I have not been able to perceive any special benefit from this much vaunted but somewhat troublesome operation. Some of the varieties were found to be entirely frozen out, while others were but slightly injured. Again, in the case of some varieties where the straw had been blown off in places, the exposed plants seemed to be in about as good condition as those which remained covered. On the whole, I am inclined to doubt the correctness of the popular theory of strawberry "mulching," or covering, and have found it, in the growing season, especially, a decided nuisance, for weeds and grass will grow up through it inevitably, and cannot be destroyed until the straw is entirely removed from both rows and spaces.

Very respectfully,

F. A. SIMPKINS.

List of Varieties.

<i>Agriculturist</i> , moderately thrifty, no runners.	<i>Golden Seeded</i> , moderately thrifty.
<i>Abraham Lincoln</i> , totally destroyed.	<i>Green Prolific</i> , first-rate growth, <i>not</i> prolific.
<i>Ballard's Seedling</i> , robust growth, shy bearer.	<i>Gen. Sherman</i> , inferior, not desirable.
<i>Boyden's 30</i> , splendid grower, fair bearer.	<i>Halleck's Prolific</i> , thrifty, poor and small.
<i>British Queen</i> , fine foliage, has not borne.	<i>Haquin</i> , new, badly winter-killed.
<i>Burr's Pine</i> , fair grower, superior flavor.	<i>Higley's Everbearing</i> , thrifty, ripens regularly.
<i>Belle Bordelais</i> , thrifty, except where trampled.	<i>Hovey's Seedling</i> , fair grower, fine flavor.
<i>Caliope</i> , good growth, poor bearer.	<i>Jucunda</i> , vigorous, fruit not large.
<i>Champion</i> , died out, complete failure.	<i>Lady of the Lake</i> , strong grower, moderate bearer.
<i>Chas. Downing</i> , moderate, healthy grower.	<i>Laurella</i> , strong grower, barren thus far.
<i>Colfax</i> , immense foliage, small fruit.	<i>Leeds' Prolific</i> , moderately vigorous, fruit small.
<i>Coppick</i> , hardy, new, promises well.	<i>Lennig's White</i> , strong growth, superior flavor.
<i>Department Seedlings</i> , 1 to 9, No. 3 best grower.	<i>Matilda</i> , new, promises well as to growth.
<i>Durand's Seedling</i> , splendid grower, very hardy.	<i>Naomi</i> , vivid green, very vigorous.
<i>Globe</i> , much injured by cold.	<i>Napoleon III</i> , winter-killed, utterly destroyed.
<i>Gloede's Pine</i> , good growth, poor bearer.	

<i>Negro</i> , strong grower, much like Wilson.	<i>Romeyn's Seedling</i> , fair grower, leaves brown-specked.
<i>Nicanor</i> , partially winter-killed.	<i>Triomphe de Gand</i> , moderately vigorous, healthy.
<i>Paxton</i> , hardy, fine handsome growth.	<i>Trollop's Victoria</i> , fair growth, brownish foliage.
<i>Peake's Emperor</i> , magnificently green.	<i>Washington (Iowa)</i> , persistent grower and runner.
<i>Philadelphia</i> , moderate grower, sure bearer.	<i>Wilder</i> , new, vigorous and healthy growth.
<i>Prince of Wales</i> , badly injured by cold.	<i>Wilson</i> , of course, great grower and bearer.
<i>Reed's Pine</i> , good, hardy grower, very late.	

Amaranthus Salicifolius.

WITH us the past summer it has been all that was promised, and more too, which is rarely the case with those high-flown English descriptions. The plants grow very rapidly, and attain a height of nearly eight feet, sometimes even ten. The habit of the plant is all that can be desired, being very graceful in habit, and resembling a Weeping Willow, which has obtained for it the name of "Willow-Leaved Amaranth." The color of the leaves is a bronze green, which changes to a bright carmine color, about the middle of August, on all the ends of the branches, making plumes of such dazzling beauty as to be truly magnificent. The plants are rather delicate when first planted, and should not be set out before the first of May. As they grow they are benefited by being staked, as they are liable to be broken by high winds in the fall. They do best in a moderate garden soil. A few plants we have had on our place this summer, have been the admiration of all who beheld them. It has proved to be a decided acquisition, and coming in a time when that class of plants are in demand, is just the right thing in the right place.

Tarrytown, N. Y.

FRANK ROMER.

The Clematis.

EDITOR HORTICULTURIST: Your note requesting information regarding the new varieties of Clematis came to hand sometime since, and I refrained from replying until I could furnish a reliable opinion.

Last spring I imported Clematis *Rubella*, *Prince of Wales*, and *Lady Bovill*. These varieties were recommended in the English journals as something distinct and more than worthy of cultivation. During the past season these new varieties were thoroughly tested, and I can only say this, that I am disappointed.

After having carefully tested a large number of varieties, I would advise the readers of THE HORTICULTURIST to plant Clematis *Standishii*, Clematis *Rubroviolacea*, Clematis *Jackmanii*, Clematis *Azorea-grandiflora*.

In a former communication I referred to the Clematis as a bedding plant, and can only say, that after one season's experience they have given me entire satisfaction.

AL FRESCO.

Plants with Variegated Foliage.*By Edgar Saunders, in The Prairie Farmer.*

QUITE a good deal can be done with variegated foliage plants to help give character and tone to a place, even when flowers are not very plenty. This is particularly the case with plants in a greenhouse, and even in a window, although to a smaller extent, of course.

We doubt very much whether the variegation in foliage comes nearly so beautiful in its markings here, as it does in a moist climate like that of England, where the rays of the sun are less powerful. Still, many kinds do well enough to be quite effective when properly grouped or used.

That the rich markings observable in England, of the Zonale Pelargonium tribe, when planted in the flower garden, is pretty much a failure, we are now quite convinced, although really sorry it is so, for they are equal to a bed of flowers where they do well; the tri-color section will never be a favorite bedder with us on account of this failure.

Even the old common variegation of white and green does but indifferently well, as compared to what one sees on the other side of the Atlantic. So beautiful and so entirely effective are they there, that they and the tri-colors, at once assume the most commanding position as bedding plants, over all other kinds. Without having seen them as they appear there, it is impossible to realize what a beautiful effect they produce.

Variegation is, undoubtedly, a species of disease, and more or less affects the vitality of the plant, which, we suppose, is one reason why these plants do not stand our hot suns in summer better than they do.

It would be an interesting question, however, to enquire whether plants produced on this continent would stand any better than such as have had a European origin.

We have one in our mind's eye, raised by R. Buist, of Philadelphia, that does admirably well, and that is the variegated Rose of Sharon, called, we thiuk, Buistii.

This plant, readily raised from cuttings of the last year's wood, taken off in the fall, could be made great use of, even as a bedding plant, although really a shrub, but by no means a strong grower, however, being a good illustration of how much the variegation seems to retard the growth of most plants so marked.

Among the plants now being occasionally offered for sale, with variegation, are the following, all of which we take from one Eastern catalogue, showing that this class of plants is really being more sought after than formerly.

To the novice in plant-growing, variegation does seem to strike favorably, as it is quite frequent to hear the remark that such and such a plant looks sick, whereas to the plant connoisseur, the same may be thought exceedingly beautiful:

Cobea Scandens variegata—Leaves green, margined with yellowish white.

Linaria Cymbalaria variegata—A very interesting variety of the ordinary toad-flax, with leaves one-half their depth, marked with sulphur white; quite a weakly grower, however.

Basella rubra variegata—A species of the well known Madeira vine—leaves scarlet, green and white—of a half shrubby state, said to stand our suns well.

Antirrhinum (Silver Belt)—A prettily marked variety of the common Snapdragon of the gardens, but quite a diminutive plant, however, as compared with the green varieties.



Training Peach Trees.

BY DR. WILLIAM M. HOWSLEY, LEAVENWORTH, KAN.

PEACH trees should be, in our opinion, trained in the fan form, making the trunks not more than *half boot-leg* high. If trained in long trunks the fruit will, in a few years, be almost or quite out of reach for gathering. As the tree advances in age, it also advances in height, shedding the lower limbs and making its new bearing wood higher up from the ground. Thus the fruit, when the tree bears, becomes very difficult to gather, in consequence of its extreme height; the weight of the fruit also being thrown so far from the body, endangers the destruction of the tree by the weight being so far from the trunk.

Hence to have a successful peach orchard, where the soil, the climate and the altitude are favorable to the production of this fruit, trees should not only be trained low, at the start, but should be kept low by annually cutting back the young bearing wood. This will keep the fruit easy of access at gathering time, prolong the life of the tree; will prevent the usual amount of shedding of the lower limbs, and increase the vigor of the fruit buds which lie between where the cutting back is done and the last year's growth. The fruit is thus kept in convenient distance of the ground for gathering, the fruit buds are better able to withstand the extremes of cold in the winter, are rendered more certain to bloom in the spring, are better able to withstand late spring frosts, and the life of the trees is prolonged. Upon the subject of shortening in the annual growth of the bearing wood, there is some difference of opinion among pomologists as to the time of doing it, some preferring late fall, others late winter or early spring, and others early fall, or so soon as the fruit is matured and gathered. We indorse the latter opinion, for the following reasons: first, it prevents, if not done too soon, the further extension and growth of young wood for the season, husbands all the sap which would have otherwise been expended for this purpose, and applies it to the increased vitality of the fruiting buds for the coming crop. If the above system is strictly carried out, together with the instructions heretofore given upon the culture of the peach, we have no hesitation in saying that this delicious fruit can be made quite a sure crop.

For the destruction of the grub, which is sometimes quite destructive to peach trees, an annual application of hot water, or a mound of leached ashes kept around the trunk at the root, will in almost every case be successful. Where either or both of these should fail, the use of the hand and knife will do the work effectually.

The Flowering of the Fig.

TO the uneducated eye the fig is a wonder. The fruit seems to come out in the place where the flowers ought to be; and the appearance is that there are no flowers before the fruit, as there is in other plants. It was the habit in past ages to attribute something miraculous to every appearance out of the ordinary course of nature, and to take the occasion to connect these marvelous appearances with some individual whom they wished the world to venerate and esteem. So this fig tree marvel came to be associated with the flight of Mary into Egypt with the infant Jesus.

The Spaniards tell us that in her flight she sheltered herself under a fig tree. In recompense for the security afforded, she blessed the tree, and bestowed upon it marvelous power. It produces two crops a year, and this is one of the blessings then conferred. But in order that the tree might be fertilized—for even in those days it was known that flowers were of two sexes—the tree put forth, by her command, one magnificent white flower of rare beauty. It was pure white and shot forth rays of phosphorescent loveliness. This fructifies the whole tree, and renders any other flower unnecessary.

This flowering still continues every year on one night only—St. John's night. It opens for a few minutes at midnight, and whoever could see or secure this flower, at the expense of the whole future of fig culture, would possess himself of a charm which would enable him to procure anything he might desire in this world.

The Virgin Mary, knowing this, caused the fig, for this evening of its flowering, to be guarded by all kinds of horrible things. There are snakes, lizards, bloated toads, birds of ill omen, wild beasts and venomous reptiles of every description, so that no one has ever been able to get near enough to see this miraculous and wonderful flower.

The story is firmly believed in by all those old Latin races, whose chance for life is cast in those regions where the fig-tree dwells; and has always been a sufficient reason to them why the fig-tree has never any flower, as they think.

What a pity it is that the cold hand of science is so ever ready to crush to death all these beautiful stories. It tells us, in spite of these lovely traditions of ages past, that the fig has flowers like unto any other plant, but the flowers are inside what we call the fruit. All flowers rest on something.

Take the apple for instance. The lowest are set on small globular productions. The floral parts, the stamens, rise out of the center of the globe; and after they die away this globe swells and becomes the apple which we eat. The fig is formed pretty much in the same way.

The little globe which we see pushing from the axle of the leaf, and which afterwards becomes the fruit, is filled with floral parts, just as we see in the apple; but these parts never project up the center so as to be seen by vulgar eyes. There is a small orifice at the apex through which the pollen is drawn, and that is all that is known to any one except of the more curious class.

The curiosity is rewarded, on breaking open a young flower, by finding it filled

with a pink, spongy substance; each of the little projections composing it being found by a small pocket lens to be a small flower. Thus the mystery ceases. The fig is really a little community in which hundreds of individual flowers dwell, and thus ends in hard cold facts the mystery of the Virgin and fig-tree.—*Selected.*

Is the Apple Crop a Failure?

EEDITOR WESTERN HORTICULTURIST: With the greatest profusion of flowers, and the finest prospect for a large crop of apples last spring, we are now compelled to believe that the crop will be small in quantity, and poor in quality. There is a general complaint of the imperfection of the fruit. The ground is covered with apples, and those still remaining on the tree are defective. The tree appears to be affected as well as the fruit. Severe droughts, and hard winters (or something else) are killing many outright, and rendering others feeble and sickly. The curculio attacks the apple as well as the peach and the plum. So that no matter how fair in appearance, or how rough and scabby, almost every specimen has a worm in it. This comparative failure appears to be wide-spread and general—not confined to any one locality, or to any particular variety. Young, thrifty, and healthy looking trees seem to suffer as bad as older ones. The borer at the root, and twig blight at the top will soon destroy many fair specimens of choice bearing apple trees. The commercial value of a good apple crop may be estimated by millions of dollars, while the domestic value is above all price. What is to be done? Are these ravages beyond the control of man? The remedies proposed are numerous and varied, but practically inefficient. The theories of a man who signally fails in practice are worthless.

Nauvoo, Illinois.

C. BRADLEY.

Miller's Daily Raspberry.

LAST spring a year, we received from W. B. Lipsey, of Marion, Ind., a half dozen raspberry plants labelled as above. It belongs to the Black Cap family, made a good growth the first season, and produced a liberal crop the second for yearling plants. He found the fruit quite as large as Mammoth Cluster, and of higher quality than the Mammoth or Doolittle. Not having received anything from Mr. Lipsey, concerning it, or any allusion to it from any other quarter, we have asked Mr. Lipsey what he knows about it, and he replies:

"Two years ago last May (1870), I received a few plants from an old friend in Southern Ohio, by the name of Isaac Miller, who informed me that he found the original plant growing wild by the side of an old stump in one of his fields, and from which he made a start. With me it gives better satisfaction than any other variety out of a dozen or more on my grounds. It is as hardy as Doolittle or any other variety."

Notes on Pears for 1872.

BY ISAAC BRANDT, DES MOINES, IOWA.

ED. WESTERN HORTICULTURIST: I hand you brief notes on such pears as I have fruited the past season.

Madeleine—Fruited well, was ripe July 25, twenty days later than last year; tree a slow grower, but profuse bearer; fruit of the best quality of the early variety.

Bloodgood—Shy bearer; fruit ripens August 1st; tree good shape and hardy; fruit good.

Dearborn Seedling—Is my favorite summer pear; tree a vigorous, upright grower; fruits young and abundantly; very fine flavor; only objection, size of fruit, being very small; ripened August 15th.

Clapp's Favorite—Tree a fair grower; abundant bearer, and good quality; fruit ripe August 20th.

Tyson—Fine, erect tree; slow to fruit, but very good; ripened August 20th.

Flemish Beauty—The old mother of them all for vigor of tree, quantity and size of fruit; ripened September 10th.

Bartlett—Quite full; pears small but very fine in flavor; ripened September 15th.

Beurre d'Anjou—A solid tree; shy bearer, but of good quality in size and flavor.

Belle Lucrative—Tree fine, erect grower; wonderful bearer, but in my estimation the fruit is poor in quality, small and tough.

Belle Superfin—Its name indicates it; a good tree, fruits well and of good quality.

Golden Beurre—A fine tree; fruits early and of the first quality.

Duchesse d'Angouleme—A hardy, solid tree; fruits early, and the fruit one among the best of large pears.

Sheldon—The very best of hardy, fine trees; shy bearer but of good quality.

Beurre Clairgeau—A fine looking tree; bears well, but the fruit is the poorest of all my pears.

St. Lawrence—A good winter pear; tree fruits well and is of fine flavor.

Buffum—Tree did not do so well; it was badly blighted two years ago and seems diseased ever since; the fruit was small and knotty; ripened September 15th.

Seckel—A slow, upright, solid grower; fruit first rate; rather a shy bearer.

White Doyenne—Tree a fair specimen of good trees; fruit first rate; bore well, and excellent in quality.

Osbond's Summer—Tree a fine erect grower, very similar to the Seckel; a shy bearer; fruit first rate.

Napoleon—Tree rather inclined to blight; the wood seems loose and spongy; fruits were very good for size, but I do not admire their flavor.

Beurre Bosc—A fair grower; fruits well, and good in quality.

Onondaga—Is also a fair, good shaped tree; fruits well, and of good quality.

Stevens' Genesee—A fine, hardy tree; fruits well, and one of the very best of fall pears.

What Shall be Done with Old Apple Trees.

BY WM. H. YEOMANS, COLUMBIA, CT.

Editor Western Horticulturist: In all of the older portions of our country are to be seen many old orchards of apple trees, that are in a dilapidated condition, and hence the question naturally arises as to the disposition to be made of them. In some cases the attempt has been made to rejuvenate these, by means of a systematic pruning, followed by a cultivation of the field for a short time, with the view of giving new life and vigor to the tree, in the hope that thereby a new lease of fruitage may be gained.

May it not be supposed that the apple tree, like all other natural objects, continue to grow to maturity, which, having attained, must of necessity pass to the decline of life; also that as it requires, according to analysis, large quantities of potash, soda, and carbonic and phosphoric acids, in order to insure a full development of the fruit, if these are not restored by a systematic fertilization, the soil will be greatly exhausted of these elements, and so unable to grow fruit to any perfection, and as another effect, the tree must feel this want of natural sustenance, and so be hastened in its journey to decay? And when this is once commenced it is "love's labor lost" to attempt any permanent restoration. This is one apparent cause of the decline and feeble condition of so many orchards. While it is by no means agreeable to attempt the cultivation of such fields, there are ways and means by which this may be accomplished, such as pasturage by swine, the spreading of ashes, salt, and other manorial substances. Now although there are many who favor the attempt to restore old trees, it is very evident that it cannot be accomplished with any hope of success, for if the seeds of decay are once planted in the parent stem, this must, in a certain measure, be imparted to every part, as is seen in the want of vigor and fruitfulness of the tree; then if felt in the growth of the branches, it must extend to the perfection of the fruit, which will be found to be sadly wanting. This being the case, how much better for the farmer to secure some favorable locality, and therein plant an orchard which shall be full of vigor, being on an unexhausted soil, and which, by proper care, will survive for years, furnishing valuable and perfectly developed fruit, and hew down the old orchard, "and cast it into the fire," that it may give room to a more desirable, and less unsightly production. The attempt to preserve the old trees that have passed their prime, and the reproduction therefrom, by means of grafting, is one great cause of the decline of some of the old established varieties, which are rapidly giving way to those of modern time, and which give promise of better success in their cultivation; because if the proposition that "like produces like" is true, a tree grafted from one past its prime will never develop so perfect specimens of fruit, as from one full of thrift and vigor, so that fruit, like all other vegetable productions, must be reproduced from seed in order to maintain a good degree of strength of growth, and productiveness of fruit; and the more this is practiced, the better it will be for the fruit raiser.

Influences of Temperature.

ED. WESTERN HORTICULTURIST: Ordinary thermometers indicate the temperature *only* at the instant of observation. Unless observed constantly the duration of any degree of temperature is not shown. Practically, *duration* is a very important matter in determining influences of temperature. Suppose that a hot-house is to be managed, or nursery stock to be moved. The thermometer may indicate 10° on the morning of any day about the middle of October, and endure at that for only three or four hours. Less damage would be done to living plants than when, two weeks later, the mercury shows 15° or 20°, but remains at that for two days. In the latter case the earth and plants become cooled so as to be constantly freezing; in the former case the latent heat would not all be taken from the ground to permit freezing so soon. The earth in the first instance would not freeze so as to injure potatoes, flower-roots, etc., when in the latter case they would be entirely destroyed.

Extremes, not means, are the practical features of climate. The fact that the average temperature of May is 50° is not so important a fact to horticulturists as that the cold of May is 25° often as late as the 25th of the month. The probability of excessive heat or untimely frosts must modify the action of gardeners, florists and farmers in planting, and nurserymen in the moving of articles liable to injury by extremes of temperature.

In view of these and kindred facts we would suggest to scientists the desirability of a self-registering thermometer, one that will show the temperature at any and all times, in all its fluctuations, variations and extremes. Is not such an instrument practical?

Ithaca, Wis.

A. L. HATCH.

Forests and Rainfall.

IN the November number of the HORTICULTURIST, page 338, Dr. Housley refers to the fact of an abundance of rain in the timbered regions of the Rocky Mountains, while east of there, on the great plains, very little rain falls, and there is no timber; hence the inference that timber is the cause of rain. I would infer that rain is the cause of timber.

I do not think it necessary to go into an argument to support such a theory, but simply state this as being the more rational conclusion. I would advise, and most earnestly advise, the planting of trees for effects which we are certain of, such as wind-breaks, use of timber and wood, ornament, modifying the rigor of the climate, both summer and winter. Statistics of the quantity of rain in the early settlement of our forest country, and after it had become cleared of its forests, would be more conclusive than many suppositions which we often see.

Muscatine, Iowa.

SUEL FOSTER.



Editorial Notes.

Death of J. Knox.

We regret to announce the death of Rev. J. Knox, of Pittsburg, Pa., which occurred in Pittsburg, 13th last November. It was only a short time before his death when we met him, and had several personal chats with him upon horticultural subjects. He seemed an example of perfect health, and the news of his sudden death, by apoplexy, was startling to all friends and acquaintances. Perhaps no man has done more for the culture of small fruits in America, than Mr Knox. Well known as the *Strawberry King*, he fully demonstrated the possibility of attaining extraordinary success in his own grounds, and introduced thousands of vines of strawberries and small fruits in the home gardens of families everywhere. We had met him in Pittsburg, Cincinnati, and Philadelphia, quite frequently the past two years, and since he had given up the care of his grounds, and left them to his successors, R. Cumming & Co., he felt freed from pecuniary cares and anxieties, and more at liberty to travel, and peruse horticultural literature. He had upon his mind the idea of writing a new volume on Small Fruit Culture, better than any now existing, and, undoubtedly, if he had lived, it would have been attempted; but he often said in response to our urgent request to have it published soon: "I can't be in a hurry; when *Knox* writes, it must be *the best*." He had done good in many other ways as a clergyman, and leaves behind a name full of honor.

The Steadily Peach.

S. Miller, of Bluffton, Mo., describes a new peach in the *Rural World* of October 12th: "It is evidently a seedling of La Grange, which it much favors, yet is ten days later, larger, and I really think better."

The Vienna Exposition.

The arrangements made and making seem to point to a success greater at Vienna than at the previous Exposition in Paris. Probably no pleasanter journey, next summer, can be taken by an American tourist than to Vienna, for, undoubtedly, there will be a vast amount of material gathered from all parts of the world.

Special attention has been paid to the horticultural department, and some think it will be the most noteworthy horticultural exhibition ever known in Europe. There are twenty-four groups of plants of all descriptions, arranged both botanically, and also for practical or medicinal uses; and in the division for greenhouse plants, there are places for new plants by themselves, plants needing high culture, plants of ornamental habit, plants of singular form, alpine plants, climbers, plants for room decorations, window gardens, weeping trees, trees with colored leaves, plants for vases, etc., etc. There is enough at once to bewilder, amuse, and instruct.

Western New York Horticultural Society.

The next annual meeting will be held the 8th and 9th of January, at Geneva, N. Y. It will be very interesting, as many valuable subjects are to be discussed.

Hardy Shrubs.

E. R. McKinney, of Lacon, Ill., writes to inquire if the following list of ornamental plants is hardy:

Golden Yew, Chinese Cypress (*Glyptostrobus, Sinensis*), Weeping Birch, Weeping Sophora, Stuartia, Kolreuteria, Salisburia, Japan Hydrangea, Viburnum Plicatum, Magnolia conspicua, Magnolia gracilis, Magnolia cordata, Magnolia macrophylla, Magnolia glauca, Azaleas (name three best), Rhododendrons (name three best).

The letter was referred to S. B. Parsons, of Flushing, who responds with the information, that "the trees and shrubs named are all perfectly hardy, and are among the finest plants we know."

The three best Azaleas are *Aurantiaca*, *Beaute de Flanders*, and *Honneur de la Belgique*.

The three best Rhododendrons—*Album elegans*, *Roseum elegans*, and *Lee*, dark purple.

A New Squash.

We received early in December a specimen squash from J. J. H. Gregory, of Marblehead, Mass., which has been named *The Marblehead*. Mr. Gregory finds from his tests, that "it has a more flinty shell than the Hubbard, is of a different color and shape, being flatter on the stem end. It has a greater specific gravity; it combines sweetness and dryness more, and keeps longer than the Hubbard. A capital characteristic is its purity, being perfectly free from any admixture with any other sort. In size and yield it resembles the Hubbard." Mr. Gregory, in a letter to us, states that since he introduced the Hubbard, he has tested scores of varieties, sent him from every quarter of the globe, and all the United States, and of them all has found but one other besides this, worthy of an extensive introduction, or addition to our standard sorts. It is remarkable, especially for its purity, being the purest squash he ever grew.

The specimen we received was examined, and fully justifies the description of Mr. Gregory, and we advise its introduction.

American Pomological Society.

Marshall P. Wilder, the President of American Pomological Society, writes us that the date of the next meeting—the quarter centennial of the Society—has been fixed for September 10th to 12th next, in Boston, at the Horticultural Hall. He further adds: "Although our princely stores are in ruins, yet we will, as of old, welcome all the lovers of horticulture, and old time friends, with the kindest of attention and hospitality."

Change of Firm.

C. L. Allen has retired from the seed business of the firm of C. L. Allen & Co., located at 76 Fulton street, Brooklyn, N. Y., and is now engaged only as a grower of bulbs, plants, and seeds upon his farm, at Queens, L. I.

He is succeeded by Moses S. Beach & Son, who still continue the firm name of C. L. Allen & Co., at the same place in Brooklyn.

Vick's New Catalogue.

It is much the handsomest of American catalogues yet issued, and is hereafter to be issued quarterly.

Rosebuds.

Mr. Henderson says that the kinds mostly grown in green-houses, are " *Bon Silene* (carmine purple), and *Saffrano* (orange yellow). The *Saffrano* is popularly known as the *Tea Rose*, the *Marechal Niel* (golden yellow), and the *Lamarque* (white) are grown, but not so extensively as the *Tea* varieties, as they require greater age before they begin to flower, and being climbers, flower best when trained to trellis work.

The Window Gardener.

Several journals have already taken notice of this curious piece of book making. Out of 132 pages, 118 are old matter, being merely the plates of an old volume (*Flowers for the Parlor and Garden*, by E. S. Rand, Jr.), and republished with only a few additional pages as a new volume, with a new title. We need merely repeat here, that the entire book trade have expressed in the most severe denunciatory terms, their disapprobation of such a scandalous course, alike injurious to author and publisher. The book has been severely criticised by *The Agriculturist, Hearth and Home*, and is to be still more severely handled by other journals, who have it in hand, for scathing notices. It is a most unfortunate thing for Mr. Rand, if he is responsible for its re-issue; and again, if not responsible, his authority and control as to the copyright, was sufficient to prevent its appearance. Among New York book publishers, it is considered a dodge, to attempt to gain some advantage from the popularity of *Window Gardening*, and "shove" this book upon unsuspecting persons. We do not express any opinion ourselves, but merely report what we have heard said, only adding that we have not told one-half. Were it a new book by Mr. Rand, none would be more cordial toward it than ourselves.

Young's New Golden Chinese Juniper.

This novelty, lately originated in England, is an almost exact counterpart of its parent, the Chinese Juniper, except in color. *The Garden* considers this color equal in richness of hue, to that of any golden Conifer hitherto known. The variegation is permanent and thorough. The plants are described as having a close pyramidal habit, and have the two kinds of foliage, which is characteristic of the parent, while the color on the more prominent portions of the plants is as bright as the tint of a Golden Holly. It is considered to be one of the most valuable variegated subjects ever sent out.

The Weeping Larch.

An English gardener, writing to *The Garden*, thinks it is "one of the most elegant of all our hardy deciduous trees, and very rare as a large tree. The specimen growing in my gardens, densely covers a walk 10 feet wide for a distance of 130 feet, its side branches spreading full 15 feet on each side down to the ground. It is of so recumbent a form of growth, that a very powerful support to the branches is necessary to allow of sufficient height for walking underneath. Some few years ago, a double row of polished oak posts, 8 feet high, was erected under it on each side of the walks, with iron posts just under the stem and main branches, and cross-bearers at intervals, to support the lateral branches, which have covered the whole structure so effectually, that the sun's rays cannot penetrate it. The branches grow perfectly flat on the trellis, requiring no training, and there is not one on the whole tree rising to a greater height than 15 feet. I have seen *Larix pendula* mentioned in Nursery Catalogues, as growing from 30 to 50 feet high. Possibly this may be a distinct variety."

A Cheap Canning Apparatus.

Mr. F. J. Parks, of South Haven, Mich., built a small canning establishment the past season, at a cost of only \$300, in which they put up 1,500 cans per day, at an expense of only \$30, exclusive of the cans. The fruit was put up by application of steam, a very simple process.

A Profitable Cranberry Crop.

Three thousand bushels were recently picked from $3\frac{3}{4}$ acres of land near Berlin, Wis. From 40 acres on the Carey Marsh, 3,200 barrels were picked, worth \$3 per bushel. The Carey Brothers employ 1,400 hands this season in picking. The daily picking by hand is one to five bushels. Price paid 75 cents per bushel. One week's picking among Berlin laborers amounted to \$25,000.

A New Gladiolus.

The John Standish Gladiolus, just introduced, has flesh colored flowers, marked with crimson and purple, forming a magnificent spike.

The Honeysuckle as a Standard.

A writer in *The Villa Gardener* thinks that the Honeysuckle is one of the most *regularly flowered* climbers in cultivation, taking rank for effect, and surpassing in many points—odor for instance—even the gorgeously colored *clematises*, which are in every modern garden. As a standard, the Honeysuckle merits the very foremost place in our villa gardens. “We have seen it with thousands of flower umbels in pale yellow and pale pink, decorating villa grounds in a way that no single plant in the month of July can do.”

It is scarcely possible, in words, to portray its extreme beauty and effectiveness.

Buy a plant of it (cost not 50 cents), train or tie it to a stout stake, as one would do a standard rose; prune it not too severely, but in the way a Hybrid China Rose ought to be done; give it a good soil to grow in, and it needs no further attention. It will grow into a plant that will astonish, by its flowering capacity, thousands and tens of thousands who have not seen it so trained.

Flowers in New York.

At Christmas, New Years, and Easter, there is fairly a rage for flowers of every description. Prices then rise to very high figures, such as Camellias, \$50 per 100; Tuberoses, \$10 per 100, and Rosebuds, \$5 to \$8. These are trade rates. Consumers have to pay higher—Camellias, \$1 each; Roses, 25 cents; Tuberoses, 25 cents; Carnations, 15 cents; Violets, 4 cents. When the holidays are past, and the fever is over, Camellias fall to \$6 per 100; Carnations, \$1; Roses, \$2 to \$3, and all others in proportion.

Pennsylania Fruit Growers' Society.

The fourteenth annual meeting of this society will be held this time at Reading, about twenty miles from Philadelphia, commencing January 15th, 1873. Some important features are introduced for the first time in this society. Usually much time is lost in preparing business. Here it is all prepared beforehand, and people can come prepared to discuss them, while under the head of new business, any subject not on the programme can be introduced at the option of members present. Among the subjects in order, we note the hedge question, line of planting trees, preparing ground for orchards, profitable management of orchards, manures, new varieties, philosophy of plant life, the whole grape question, the interests of fruit growers, beautifying of grounds, manufacture of fertilizers, ripening and preserving pears, underdraining, weeds and weed laws, sheltering orchards, and so forth. Members are selected to open these questions by a *short* address. Among the names announced for addresses are those of H. Bartram, Wm. Parry, H. T. Williams, S. W. Noble, Wm. Saunders, Charles H. Miller, A. S. Fuller, F. F. Mereeron, J. S. Stauffer, Tobias Martin, T. M. Harvey, E. Satterthwaite, H. M. Engle, T. B. Jenkins, and Thos. Meehan.

The list of members embrace names from all parts of the Union, as the annual column of proceedings is the next best thing to being present personally. The annual fee for membership is two dollars. President, Josiah Hoopes, West Chester; Secretary, W. P. Brinton, Christiana.

The American Agriculturist Toward Horticultural Journals.

We are determined that our equanimity shall not be disturbed, although often many provoking occasions arise for an outburst of temper. Several criticisms appeared last fall in the *Agriculturist* and *Hearth and Home*, about the horticultural journals of the United States, and with rather more than usual to say about THE HORTICULTURIST. We only laughed when we read them, and then put the papers away, and have never looked at them since. The public will learn ere long, that *small shot* do very little harm against "iron clads," and we think lovers of horticulture had better not stop taking or reading their horticultural journals, because the *pepper* and *mustard* of one editor's spice box happened to be stronger than usual. There is good enough yet left among the *ruins*. We do not remember that these two journals have ever said many good words for horticultural journals generally during the past five years.

A Freak of Fashion.

One of our fair American ladies has been indulging in a quiet, yet curious way of humbugging fashionable visitors. She has an orange plant in her parlor, which bears neither bud or blossom, but she has made two full blown flowers, and one half-opened bud of *wax*, and placed them upon the barren stalk. Her callers all admire the sweet perfume of the lovely flowers, and the gentlemen often remark that the bud has considerably expanded since they were there last. After they are gone, the family have a good laugh.

Good List of Apples for Profit.

A Central New York fruit grower has made out a list of profitable varieties, and names the following which will be found to sell well, give excellent satisfaction, and ripen in succession:

6 Primate.	10 Baldwin.
10 Red Astrachan.	10 Greening.
10 Lowell, or Tallow Pippin.	10 Northern Spy.
6 Golden Sweet.	10 King.
5 Hawley.	10 Roxberry Russett.
6 Ounee.	—
7 Pound Sweet.	100 Total.

Tea Culture in California.

This at last is a failure. Out of half a million plants put out at Calistoga, only six specimens remain. The principal cause, we imagine, is from poor transportation from China. If seeds were imported, and plants propagated, success might be better.

The Lawton Blackberry.

English horticulturists are delighted over this variety—it makes a capital preserve, "when mixed with a few apples to take off the sweetness." It sounds rather odd to us over here where the vines grow wild, to read their enthusiasm over it. But what can we expect of a country where peaches are sold for \$5 each, and raised in hot-house or against the wall. America is certainly ahead on fruits.

Amorphophallus Rivieri.

From indication this is to be the "coming plant" for 1873. A. S. Fuller thinks it is destined to be a general favorite, on account of its luxuriant growth, and rapid multiplication of tubers. At present they are quite high-priced.

Floral Notes.

Eucharis Amazonica.

The *Garden* says that: "So rapidly has this noble stove plant grown in the estimation of the plant-growing public, that it is already almost as indispensable to the stove collection as is the lily of the valley and the white camellia to the bouquet-maker. Indeed, the *Eucharis* bids fair to rival either of these, even with the Covent Garden people, and it is very extensively used among cut flowers. For room, stove, and, in the summer, conservatory decoration, it is equally valuable. To this we have to add that the best plants of it ever shown were grown by Mr. Howard, gardener at Bedford Hill, Balham, and that his success resulted from heavy waterings occasionally with mild liquid manure, a genial stove temperature, and repeatedly syringing them when in a state of growth. It is another illustration of the fact that cultivators generally have a poor idea of the true requirements of plants as regards moisture at the root when in a growing state. The splendid specimens we allude to, like other things grown by the same skillful cultivator, were not, when in want of water, simply watered once, but the first was considered merely a preliminary dose, and two others given. The fact is that, instead of the common statement made so repeatedly in the gardening journals, that most plants perish from over-watering, being true, the opposite is the case. Most pot plants that die perish from insufficient watering. Let it not be inferred from this that we recommend frequent waterings: one thorough one will save a dozen dribblings such as gardeners too often give, and therefore save time, and be far more effective and wholesome for the plants."

White Scarlet Sage.

A new variety of the *Salvia Splendens* has been originated by H. E. Chitty, of Paterson, N. J., with *white flowers only*, and dwarf growing habit, known as the *Salvia Splendens Compacta Alba*. At the last fall exhibition of the Massachusetts Horticultural Society, in Boston, September 16th to 20th, it received high commendation.

Willow-Leaved Amaranth.

In a majority of places this year this *Amaranthus Salicifolius* has had remarkable success, and promises to be still more popular. We have seen it under a number of adverse conditions, but its growth here this year demonstrates its general adaptedness to this country.

A Floral Curiosity.

In Santa Clara, Cal., there has been grown this year by J. B. Rinehart, a black lily with three large blossoms, each nine inches long, and perfectly black. The outside of the leaves are green, while the inside and edges are black. This might be called a floral phenomenon.

Flowers in London.

The demand for flowers in London is said to be astonishing, and the prices given for them amazing. The dinner tables at fashionable parties and meetings are said to be regular bowers of flowers and ferns. At a recent dinner the flowers cost \$1,000, and the peaches 12 guineas per dozen, or \$5 per peach.

Eucharis Amazonica.

A correspondent of *The Garden* considers this one of the most valuable of winter flowering plants: not that it usually flowers during the dull season of the year, but it is one of those accommodating plants that may be forced into flower at any time by the use of bottom heat and a little judgment. Their great waxy blooms are well nigh invaluable for bouquets, floral decorations, or for ladies' hair. For the last mentioned purpose they stand unrivaled; *Phalaenopsis* blooms not even excepted.

A Large Fuchsia.

In the garden of the Knight of Kerry, at Valencia, there bloomed the past year a fuchsia, Ricarlorici, whose circumference measured 124½ feet around the extremes of the branches.

The Clematis as a Garden Flower.

In a little volume, just published in England, bearing the above title, there is an elaborate plea for the freer use of the Clematis in garden scenery. "An inappropriate position can scarcely be found, at home in dressed ground, as bedding plants, as pillar plants, as umbrella plants, as single plants, or in masses, about ruins or rockwork, or amongst grotesque arrangements of tree stumps, they are equally at home. In fact, the bed, the pillar, the wall, the rock, or whichever it may be, is merely the skeleton or foundation on which the glorious blossoms of the Clematis are to be displayed. Viewed in this light, the *rootery* (over tree stumps) is one of the most appropriate of all places in which to introduce these splendid plants, inasmuch as its picturesque irregularities—its trunks and arms—just serve as supporters of the gorgeous purple vestments of Queen Clematis, and become, so to speak, the train bearers, who spread them out in all their rich exuberance and amplitude, before the gaze of her admiring and astonished devotees."

The details of culture under this head are much the same as those which are required for pillar plants; a deep rich soil must be provided, then annual manuring, and in the summer, liquid manures.

In regard to training, all that will usually be required will be to lead the young shoots, during their spring and early summer growth, as evenly as possible, over the manes of roots—or rock if planted on a rockery—leaving them afterwards to fill out the picture in their own natural way.

The Ivy-Leaved Pelargonium.

The Garden says, that amongst the numerous plants now in use for the ornamentation of hanging baskets, for draping vases, or for training loosely up conservatory pillars, few surpass the Ivy-Leaved Pelargonium. The green and bronze-leaved varieties are also suitable for use in this way, but the variegated varieties are the most attractive. In addition to their graceful habits of growth, they possess the great advantage of almost entire immunity from the attacks of insects. This is a great desideratum, more especially in the care of plants that are suspended over others; as in this position, if infested with insects, they quickly communicate them to all plants that grow below them. They are also plants of easy culture, and strike freely in sand and loam in small pots.

Ordinary loam, to which has been added a little well-rotted manure and sand, suits them perfectly. They require little attention beyond stopping, in order to induce them to break sufficiently to afford the proper amount of shoots to give them a well-furnished appearance. An eight or ten inch pot will be found large enough for them, and for large hanging-baskets, two or three plants may be put together, or they may be mixed in this way with other plants, suitable for this description of decoration.

The old plants may be cut back, and induced to break afresh, or young ones may be struck, and the old ones thrown away, when the baskets or vases are refilled.

New Double Geranium, "Jewel."

The Journal of Horticulture says that Thos. Laxton, famous for his experiments in hybridizing pears, has also originated a remarkable double Geranium, named "Jewel." The great charm of the flower is the remarkably double form of each pip.

Mr. Laxton compares it to a miniature rose. It will be of great value for button hole bouquets. The habit of the plant is dwarf, and it blooms very freely. Received a first-class certificate from Royal Horticultural Society.

Curiosities of American Floriculture.

Peter Henderson writes *Hearth and Home* that the *Smilax* seems almost entirely uncultivated among florists around London. Many readers will be surprised to learn the extent to which it is cultivated in this country. "There are in New York and Boston, probably twenty greenhouses, having an area of 20,000 feet, used exclusively for the growing of *Smilax*. Besides this, thousands are grown as window plants by private individuals. No plant is better fitted for house culture, as it grows in any temperature, from 50° to 75°, and does well in comparative shade. Some of the English florists were surprised to hear how a plant they so much neglected, was valued here. They may probably wake up to its value, but it will take time. It took three years for the New York florists to find out that their contemporaries in Boston were far ahead of them in the cultivation of *Smilax* and Rosebuds; and even to-day, 'Boston rosebuds' bring ten per cent. more in New York than home grown, for no other reason than that they come from Boston. It is probable that \$40,000 have been expended the past season, in the vicinity of New York, in erecting greenhouses for the growing of these two articles alone."

The Campanula Vidalii

Is recommended as a perfect gem for the greenhouse. It is a low growing plant, with racemes of pure white bell-shaped flowers.

Hot Water,

According to Mr. Meehan, is not economical in small greenhouses. Brick flues are much cheaper and more economical. In large houses, however, the hot water apparatus is recommended as the best.

Propagating Honeysuckles.

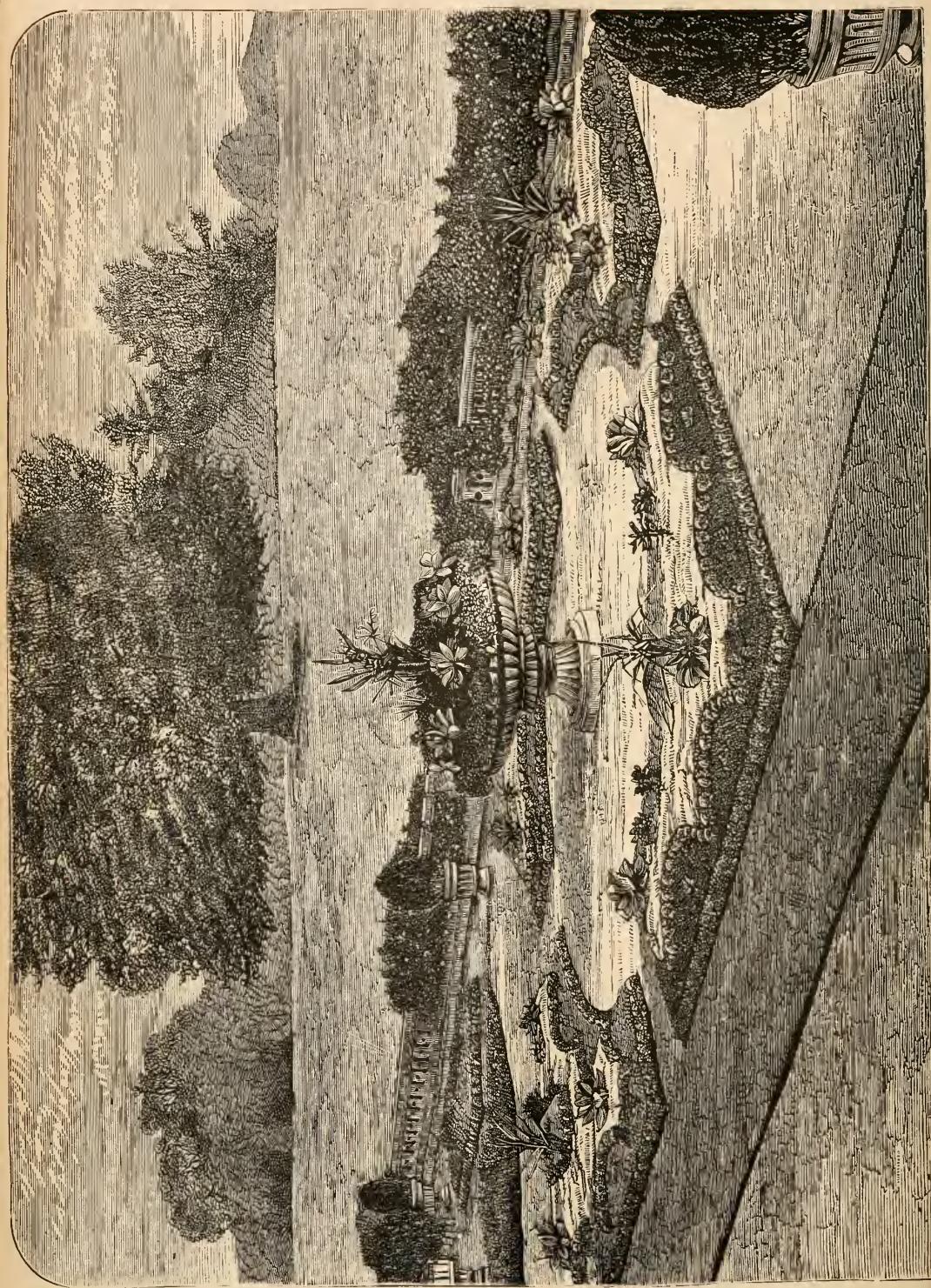
One of the simplest methods is to bend down a branch in spring and cover a portion of it in the earth; by autumn it will be well rooted, and can then be separated from the parent plant. Cuttings made in spring or winter will usually grow when planted in the open ground in the same manner as we do with currants.—*Rural New Yorker.*

Fuchsias from Seed.

Fuchsias are readily grown from seed, and usually vary widely from the original stock. The seed pods should be allowed to remain on the plant until they fall off; then lay them aside for a few days, or until they begin to decay. The seed may then be washed from the pulp and spread upon paper to dry. They may be sown immediately, or kept for a few months in paper bags. Sow the seeds in fine, sifted soil composed of leaf mould and sand, covering not more than an eighth of an inch deep; sprinkle the soil with water, being careful not to wash away the seed; then place the pots or boxes containing them in a warm place, giving water as required. When the seedlings are large enough to handle, pot off singly into small thumb pots. As the plants become large and strong, shift into larger pots.—*Rural New Yorker.*

***Editorial Notice.****Vegetable and Flower Seeds.*

Mr. J. J. H. Gregory, of Marblehead, Mass., is well known as one of the few leading seed growers in this country. He was the original introducer of the Hubbard squash and many other of our new and valuable vegetables. All seeds from him are warranted fresh and reliable. His advertisements will be found in this number, and we invite attention to them. His illustrated catalogue for 1873 (now ready) will be sent free to all applicants.



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Flowers for Ornament and Decoration.

BY ANNE G. HALE.

ONE important rule in the grouping and arrangement of flowers will bear frequent repetition. It is this: *green gives character, white gives brilliance.* With plenty of green there will be more distinctness, higher individuality, and greater clearness of idea, together with a general expression of quiet and rest; while an abundance of white gives more splendor and brilliance, and a diffuseness of sentiment, which, unless displayed by airy figures and graceful postures, dazzle and weary the beholder.

And, further, it should be remembered that groups and collections of small flowers, even if of varied forms and their hues ever so judiciously mingled, are never effective. But serving unobtrusively to bring the magnificence of their queenly sisters into high relief they gain from such companionship reflected glory and power.

The most tasteful of room decorations are long garlands of flowers or of verdure festooned along the walls, around pictures, about the doorways, or from each corner to the center, and looped gracefully around the lights. At each looping or festoon should be placed a hanging bouquet, a cluster of loosely arranged drooping flowers, or an individual rose, lily, or camellia, in company with a spray or two of some vine with its wandering branchlets and curling tendrils. Braided evergreen or a stout rope covered with lycopodium and kalmia leaves forms an elegant festooning. Leaves of the camellia and myrtle and sprigs of box add to its beauty. Lycopodium should be cut in pieces three inches long, the leaves, in twos and threes, taken with this as little bouquets, placed upon the rope and bound securely around it with a stout twine or cord, in such a manner as to form an ever continuous line of verdure, the leaves projecting slightly from the lycopodium. To expedite the work, the rope should be stretched its entire length, and each end securely fastened before the green is tied upon it. If a floral garland is desired it is best to prepare the verdure in this way,

but to keep the flowers fresh the rope and cord should be dampened, and wet moss used among the green. Flowers are easily inserted between the bits of verdure, particularly if their stems are lengthened by wire or twigs, as is often necessary when using short-stemmed blossoms; moreover, when the flowers have withered they are more readily removed and their places filled with fresh relays.

A hanging bouquet is prettiest composed of a few choice flowers, with small fern leaves or other light foliage. Take camellias, roses, azaleas, lilies, and the like, for the more prominent individuals, with panicles of eupatorium or stevia, and bouvardia; or heliotrope and acacia, or deutzia or verbena, as companions. They should be loosely connected, at the base of their stalks tied together firmly, however, but in such a manner as to give a globular appearance to the group. Hence it is necessary to graduate the length of the stalks; and it is best, if possible, to use flowers upon their own stems. If wired stems are used, as is often the case with camellias, the wire must be wound about with green moss or lycopodium. If a bit of wet cotton or wicking is wound around the end of the stalks and then covered with damp moss the bouquet will retain its freshness longer.

Alternating with these hanging bouquets—at the looping of garlands—clusters of fuchsias, begonias, calceolarias, or other flowers of similar habit, are very beautiful—regard being paid to the proper contrasts and harmony in their tints; or, as above mentioned, sprays of some luxuriant vine, with a blossom—rose, lily, etc.—to crown their beauty.

Hanging baskets of plants or of flowers, are fine ornaments for alcoves or doorways. If filled with growing plants, flowers may be inserted in the damp soil with good effect, on special occasions, but care must be taken not to overload them. With too profuse display of blossoms (these baskets being generally of rustic design) they appear "loud" and vulgar. Even in hanging baskets designed especially for flowers there is danger of this. An abundance of vines and trailing shrubs, with a moderate supply of flowers to brighten them, is more appropriate. Almost any round or oval basket will answer for this purpose. It should be lined with tinfoil or thick paper and then filled with damp sawdust, the sawdust heaping a little in the center to form a slightly rising mound of the whole. Green moss should then be spread over the surface, and in this the foliage and flowers inserted by their stems. Fir-evergreen, or lycopodium, and box may be used for foliage—arbor vitae, kalmia or camellia leaves forming the border of the basket, or, rather, the edging of the floral mound. But green of a tenderer tone and tissue is more desirable; and flowering vines—mimulus, petunia, maurandia, cobeia, ipomea, adlumia, and the like, are much prettier wandering at will from the edge and twining up the handles. Ivies are especially beautiful for basket foliage, and sprays of the passion-flower vine or of clematis, springing from a basket, form a graceful festooning for an alcove, window, or doorway.

These baskets, without handles, placed on small stands around which the vines are allowed to stray are exceedingly attractive as parlor ornaments. A common wicker stand, used for sewing materials, is a nice receptacle for such an arrangement of flowers. Instead of sawdust damp bog-moss may be used. Procure clumps of this (if a few wild vines or small plants are growing among the moss they will add interest

to the flowers); fill a lined basket with these or place them in a deep dish set within the basket, then arrange the flowers as directed for the hanging basket. The bog-moss retains moisture a long time; the flowers may be removed when they decay and others fill their places; the moss and the wild plants being occasionally watered will remain green and grow through several months.

[TO BE CONTINUED.]

A Treeless Forest.

IF it is possible for any country to bear the above anomalous title, one need only read the following items to appreciate the possibility of its existence:

In Dalmatia, Europe, there existed formerly a Karst or forest, which originally was dense and heavy; gradually it has been thinned down till now it is utterly devoid of vegetation. And among the topics which exercise the constant efforts and thought of the ministry of agriculture of the Austrian Government, is the project of its restoration to pristine verdure and leafy greenness.

On December 12, 1871, there was held an exhibition of agricultural and forest seeds, at Vienna, wherein was a collection of 60 varieties of forest trees, under the care of the directors of the Central Nurseries. These nurseries are now devoted to the raising of trees and shrubs, to restore the Karst as a forest. A correspondent of the *Gardener's Chronicle*, traveling over the country, communicates the following detailed intelligence concerning it:

The Karst is now almost devoid of any vegetation, and is covered, for the most part, with larger or smaller pieces of Chalk-stones, of a cold greyish color, remarkably perforated, and often in a decayed state from the rough climate and the dreadful "bora." Only in the funnel-shaped valleys (called Dolinen) is any vegetation to be found. This is partly natural, partly raised by the hand of man, who turns to use every available spot of ground in the vicinity of his wretched domicile.

A beginning with this plantation has now been made, and I do not doubt but that success will crown the effort if only continued with perseverance. As a proof that on the rocky surface of the Karst woodland can exist, I may mention the deer garden of the Princess of Hohenlohe, at Duino, the ancient and charming castle of which crowns a picturesque rock rising up out of the blue sea, and which may be observed even at a distance from Trieste or Miramar.

The five nurseries, laid out for the purpose of producing plants for the Karst, are placed in different places and at different elevations on the mountain, to adapt them the better for their future locality.

The three first are situated on Monte Sermin, near Capodistria, on the sea-shore. Here are produced seedlings fit for the lower countries, to about an elevation of 50 feet above the level of the sea. The ground in this region consists chiefly of chalk sparingly mixed with a reddish ochery clay. More than 2,000,000 of seedlings are here in readiness, amongst them 678,283 *Fraxinus Ornus*, 83,854 *Pyrus communis*, 712,529 *Robinia Pseudo Acacia*, 153,689 *Pinus austriaca*, 75,928 *Hibiscus Syriacus*, etc.

The richest of these nurseries is that at Gorz, where more than 5,000,000 of young plants are in cultivation. The trees most cultivated there is *Fraxinus Ornus*, with 3,616,345 specimens; *Tilia*, 149,530; 397,348; *Morus alba*, 9,675; *Castanea vesca*, 4,415; *Punus Avinum*, 7,876, etc. The nursery ground lies on a level, and soil is of a clayey, gravelly nature. The plants here grown are used for planting out the rising ground of the Karst which surrounds Gorz.



Special Manure for Peach Trees.

I HAVE used, the past year or two, a special manure on my peach trees with marked success. So far as I have tried it I have found it equally good for vegetables, and I see no reason why it is not a good manure for fruit trees of all kinds; in fact, I have known it to bring peach trees that were dying with yellows back into a bearing condition. I think very likely it will prevent the summer blight in pears. I intend to try it the coming season on small pear stock. I use for each acre, broadcast, the same quantity as for an acre of potatoes, and the following are the proportions:

120 lbs. Nitrate of Soda.	160 lbs. Superphosphate of Lime.
80 " " Potassa.	160 " Sulphate of Lime.

The N. of Potassa should be ground. After mixing the above together, add three or four parts of fine muck. When applying the mixture for the benefit of peach trees, spread evenly as far as the roots extend, and before a rain.

Babylon, L. I.

P. H. FOSTER.



Fruit in Indiana.

BY J. H. HAYNES.

NOW that the growing season is past, we can collect whatever items of interest or profit that may have been presented to our view, and store them away for future reference. Nothing is so beneficial to the horticulturist as experience; and by a comparison of the experiments of others in various sections, we gain much to assist us in our labors, so that it may not be in vain.

It is a fact, clearly proven, that all varieties of fruit will not succeed in all localities, and it will be only by the untiring efforts of the earnest friends of the cause that a select list for each section will be collected.

The year in Indiana has been one of unprecedented drouth. From April till the present, the soil for a great depth has been dry, and it has been a very difficult task to keep our *pets* alive; but doubtless many good results have had their origin from this drouth, as for instance, all grapes have been very healthy in foliage, fruit very good, but growth only an average.

Grapes.

Out of my list of 150 varieties, including the Utah hybrids, Eumelan and Walter, not one has been mildewed, though formerly the two latter were always touched.

Mr. Thompson's Carpenter and Grant grew finely; wood, short-jointed and mature; foliage, very healthy. While Dr. Parker regards them doubtful for his section, I regard them as certain of success here, as I do the Delaware or Hartford, and I have great hope of their ultimate success as two of our choicest table grapes.

Croton and Senasqua are both very excellent grapes; growth, good; foliage, very healthy. The Croton is the finest white grape I ever saw. Should Mr. Underhill's "Irving" prove still superior (as he claims for it), it will be truly a treasure.

I have two black grapes, the Worden and Paxton, which are very superior; the former as an early grape, the latter as a late; both are very strong growers, hardy as the Concord, and equally as productive; from the fruit of two years, I should place their chance of success very high.

Arnold's Hybrids are very fine in quality, yet the size of berry and bunch will be a serious drawback to their popularity.

Mr. Caywood's Hudson and Duchess are both very fine grapes, similar in growth to Concord, and fruit quite superior.

Perry's Siglar, a white grape of large size and early, delicious flavor, good grower and quite hardy. This list includes all that have as yet shown their merits, while I have a large number which have not fruited sufficient to judge them.

Pears.

Pears have been only moderate in quality of fruit, and have ripened much before the proper season, owing, no doubt, to the excessive heat and drouth, but no blight has manifested itself this year. The growth has been short but mature.

Quite a number of new varieties have fruited for me this year, of which some are very promising, and if in the next two years they show as many good qualities in tree and fruit as they have the past few years, they will prove great acquisitions to the list of hardy pears for Indiana.

The Mt. Vernon is an excellent pear, but from every indication now will prove a late fall rather than a winter pear.

Souvenir du Congres and Assumption are equal in quality to Bartlett, and quite superior in size, and both ripen a few days before it. They are remarkable growers, and this season have retained their foliage till frost.

The Goodale is a favorite of mine, not only for its beauty and symmetry of tree and its healthfulness, but also for the uniform size and perfect form of fruit. It will seldom require thinning, as it sets just about sufficient fruit to mature right.

Beurre Baltet, Barrone Leroy, Marshal Wilder, Notaine Minot and Doyenne Janvier have borne sufficient to give a foretaste of their great excellency, while their general habits of tree are all that is required to show that they are adapted to this climate.

There may not be much profit (if dollars is the object), in having so many varieties, but there is great pleasure in learning the habits of these different fruits, and when we find them a success, we feel amply repaid, even if only one of five prove so.

What horticulture wants is active, earnest men, who will labor for the benefit of horticulture, as well as for the almighty dollar.

Delphi, Indiana.

Selaginellas.

BY A. VEITCH, NEW HAVEN, CONN.

If any apology is needed for the following remarks on Selaginellas, it is the fact that after repeated efforts to find something like a correct technical description of the species herein enumerated, as well as several others, I have, with all the helps at hand, very signally failed to do so. True it is, we have a list of their names, some account of their habits and native countries in the latest edition of "Paxton's Botanical Dictionary"—a fuller description of half a dozen or so in "Gray's Field and Garden Botany," and a very interesting popular account of many more, by Mr. Williams, in his book on "Ferns and Lycopods." But withal, there seems to be a lack of information abroad as regards the distinguishing characteristics of so many now in cultivation, that even venders find it hard to know whether they receive what they order in making purchases, or fill their own orders correctly.

I have no other motive for stating this fact, than simply the desire to remedy what may seem an unavoidable evil, but one which none the less leads to unpleasant consequences.

One remedy for this state of things would, undoubtedly, be a work of reference, wherein is stated all that is necessary to enable interested parties to distinguish one species from another, and to know just what they have, and what they have not.

Of course any effort of mine to supply this want could only be partially successful, not having had the necessary training to grasp the entire subject, and present it in such befitting terms as a professional Botanist could. Yet still, we believe in the adage, "better half a loaf than no bread," and so have ventured to describe from living specimens those that we best know, hoping it may prove to be the forerunner of something more accurate and full.

Section 1st. Stems Sending out Rootlets.

S. apus. (Syn. *Lyc. apodium*.) Stems spreading one to two inches high, sometimes forming close patches, delicate; leaves nearly one-eighth of an inch long, spreading horizontally, obliquely ovate-elliptical, serrulate; intermediate ones half as large, nearly erect and acutely pointed. A native species, not rare, and quite interesting in cultivation.

S. densa. (Syn. *Lyc. densum*.) Said by some to be the same as the last, and perhaps not greatly different, yet sufficiently so to constitute it a well marked variety. Large leaves, less spreading and rounded; smaller ones, less in proportion and more erect. The whole plant much more delicate, and growing in denser tufts. N. Holland.

S. delicatissima. (Syn. *macrophylla*.) Stems slender and trailing, 8–12 in. long, rooting nearly their whole length, irregularly branched; leaves elliptical, serrulate, with long cilia at the base; smaller ones, ovate, pointed. Columbia.

S. Kraussiana. (Syn. *denticulata hortense*.) The best known in gardens, perhaps, of any in the genus, and not the least useful for decorative purposes. S. Africa.

Var. *variegata*. Growing branchlets greenish white; rather pretty.

S. Martensii. (Syn. *Lyc. Stoloniferum*.) Stems ascending, 6-12 in. long, bearing numerous twice pinnate and forked branches; leaves obliquely ovate, obtuse under-edge and towards the apex of the upper serrulate; smaller ones ovate, serrate, with long recurved points. The Canaries.

Var. *Compacta*. (Syn. *Lyc. formosum*.) Stems stouter, nearly erect, 6-9 in. high; branches crowding and forming a dense head.

Var. *Compacta variegata*. Same as last, but with the branches and leaves variously mixed with white.

S. Galeottii. (Syn. *dichrous*, *Karsteniana*, *Schottii*.) Stems long and trailing, sending out rootlets nearly their whole length, reddish-brown, and beset with distant leaves one-eighth of an inch in length, ovate oblique, denticulate, as are those of the branches; intermediate ones somewhat pointed; branches distant, one to several inches long, bearing several mostly forked branchlets. A fine growing species, and likely to become a favorite with florists, as it can be trained several feet high in the form of a pyramid, so as to resemble a miniature evergreen shrub. Mexico.

S. uncinata. (Syn. *Lyc. caesium*.) Stems long and trailing, branches several times divided; branchlets short and crowded; leaves oblong, obtuse, entire; smaller ones ovate, with slender uncurved points. Chiefly esteemed for the metallic luster of the leaves, which, when grown in a moist warm house in the shade, are very beautiful indeed. China.

S. laevigata. (Syn. *caesium arborium*.) Stems 1- $\frac{2}{3}$ of an in. in thickness, reddish-brown, as are also the rootlets, 4-6 feet in length; branches distant, froud-like, ovate-lanceolate, 6-12 in. long; leaves oblong-ovate, entire, not pointed; smaller ones with rather broad obliquely incurved points. A showy species with the iridescent hue of *uncinata*, and when trained to a stake or twisted around several in the form of a cylinder, is very striking and attractive. Madagascar.

S. serpens. (Syn. *mutabilis*, *Jamaicensis*, *variabilis*.) Stems prostrate, rooting their whole length; branches pinnate; spikes 1- $\frac{2}{3}$ of an in. in length, bearing numerous large spore cases in the axles of wedge-shaped, serrate, leaves; leaves of the branches ovate, blunt, sparingly serrate, their edges turned upwards; smaller ones apressed, pointed. The whole plant light green in color, appearing almost white in the twilight. West Indies.

S. Poulterii. Stems slender and spreading, 3-4 in. high; branches distant, forked; large spore cases conspicuous; leaves one-sixteenth of an inch in length, round ovate, straight, obliquely pointed or blunt, ciliate; smaller ones ovate with straight points, ciliate-dentate. A diminutive species, but quite interesting in a collection.

S. inequalifolia. Stems reddish-brown, ascending, 6-9 in. high; branches alternate, distant, fan-shaped, or palmately forked; leaves on stem distant, obliquely ovate, pointed, entire; those of the branches imbricated, half as large with short points. Very handsome. Java.

S. Griffithii. Stems 6-10 in. high, nearly erect with nodding tips, reddish-brown as are also the long rootlets borne on half their length; branches alternate, bi-pin-

nate and forked; leaves one-eighth of an inch long, oblong-ovate, straight on the under side, crenulate; smaller ones ovate, acute, crenate. Readily distinguished by its yellowish-green color and handsomely arranged. Borneo.

Section 2d. Stems not Rooting.

S. setosa. Branches spreading frond-like, bright green on the upper side and becoming red with age on the under; branchlets pinnate, divisions bearing 2-4 short spikes; leaves obliquely ovate-lanceolate, serrate, with long cilia at the base; smaller ones serrate, and long pointed.

S. caulescens. Branches 18 in. high, spreading frond-like; branchlets pinnate and forked; leaves obliquely ovate, short pointed, serrate on the upper edge and entire on the under; smaller ones ovate-lanceolate, serrate and pointed. E. Indies.

S. triangularis. Stems nearly erect, one foot high; branches at irregular distances, opposite, and disposed so as to give the whole a triangular form; branchlets bi-pinnate, close together but not crowding; leaves obliquely ovate-lanceolate, entire; smaller ones with long incurved points.

S. Lyallii. (Syn. *Lyc. Lyallii.*) Stems 6-12 in. high, somewhat trifurcate, lateral branches shortest, deep green, and rather ridged; branchlets simple, or once or several times divided, close, but not crowding; large leaves ovate, entire with points bent in direction of rachis; intermediate ones ovate-lanceolate, points reflexed. Madagascar.

S. erythropus. (Syn. *umbrosa.*) Stems 4-6 in. high, dividing into three horizontal or ascending branches, lowest pair reflexed which gives the whole a halbert-shape; large leaves round-ovate, oblique, ciliate on the upper edge from the middle downwards; smaller ones ovate, pointed, serrate on the under edges and ciliate on half the upper. Tropical America.

S. flabellata. 8-12 in. high, branches ascending, ovate-acuminate, whitish on the under side and bright green on the upper; branchlets 1-2 in. long, pinnately forked; leaves ovate-lanceolate, denticulate on the under edge and towards the apex on the upper; smaller ones ovate-acuminate, sparingly denticulate. Tropical America.

S. pubescens. (Syn. *Lyc. Willdenovii, Braunii.*) Stems ascending 6-18 in. high, bearing numerous branches, spreading frond-like, scarcely pubescent; branches 2-3 pinnate and forked; spikes one-sixteenth of an inch long; leaves obliquely ovate, obtuse; smaller ones apressed and pointed. E. Indies.

S. elongata. (Syn. *cordifolia.*) Branches 9-12 in. high, ovate-lanceolate, light green; branchlets bi-pinnate, 1-2 in. long, closely set but not crowding; leaves ovate-acuminate, denticulate.

S. convoluta. (Syn. *paradosea.*) Stems 2-4 in. high; branches pinuately forked, short and ridged; large leaves imbricated, ovate, oblique, sparingly serrate, pointed; smaller ones ovate-lanceolate. An interesting species, which may readily be distinguished by its deep green color and low forked branches. Trop. America.

S. involvens. 3-4 in. high; pedately branched and bearing numerous forked branchlets near the top, one-eighth of an inch wide; leaves ovate-oblong, oblique, sparingly serrulate; smaller ones ovate, with long bent points. Japan.

S. pilifera. (Syn. *lepidophylla*.) 3-4 inches high; branches arranged around a central stem, frond-like, imbricated; leaves ovate, serrate, with long slender points. A handsome species, grown quite often as *lepidophyllum*, which it very much resembles. Texas.

S. cuspidata. (Lyc. *circinale*.) 6-15 in. high; branches frond-like and arranged round a central stem very much in the form of a bird's nest, delicate pale green; branchlets bi-pinnate, one inch long; leaves obliquely ovate with long bristle points, serrulate and long ciliate at the base; smaller ones obliquely ovate and pointed. Trop. America.

Situation as Affecting the Grape Vine.

BY ALEXANDER W. COWPER.

THE expedition to the Rocky Mountains found, on the borders of the Arkansas and near the eastern side of the Great Desert, hundreds of acres of the same kind of vine (*vitis vinifera*) which produces the wines of Europe. These vines were growing in a wild state, and were surrounded with hillocks of sand, rising to within from twelve to eighteen inches of the ends of the branches. They were loaded with the most delicious grapes, and the clusters were so closely arranged as to conceal every part of the stem. These hillocks of sand are produced by the agency of the vines, arresting the sand as it is borne along by the wind.—*Horticultural Register, August, 1836—From the Rural Carolinian, December, 1872, page 136.*

Early in the nineteenth century, my grandfather sent laborers to Long Island, on the coast of Georgia. Walking on the sea beach, they found grape vines growing a little above high water mark; they were loaded with delicious grapes. After the men had gorged themselves they became blind, and remained so for three days.

A year ago I noticed a wild grape vine growing on a low hummock near the black rush; part of the vines entwined a tree, others had run over the rushes and taken root. The rushes were about two and a half feet high, and the soil on which they grew, a moist rich clay loam; the soil of the hummock was only a few feet higher, a rich moist sand loam. The grapes on the tree were small, sour, watery, of the variety *vitis vulpina*. Those rooted among and running on the rushes were large, fleshy, sweet and agreeable, only to be recognized as the same kind as those on the tree by the parent vines issuing from the same stock.

Hamilton, St. Simon's Isle, Geo.

Where to Plant Peaches.

BY PARKER EARLE.



THERE are two classes of people who plant peaches: the great number of farmers, gardeners, and amateur pomologists who grow them for private use only, and who should be governed in their planting by quite different considerations than those controlling the market-grower, constitute the first, and far the most important class. A majority of the American people own or occupy, and to some extent cultivate a sufficient quantity of land to make it possible for them to grow much, if not all the fruit which their families consume. It is quite possible, that in many instances it may cost more to grow it at home than to buy an equal quantity in the market; but there are abundant reasons why many varieties of fruit should be home-grown, even at some additional expense. The leading advantage is, that if we grow our fruits at home *we have them*, and it is not always convenient or possible to buy according to our tastes. The fruits we grow ourselves, we can have in their greatest perfection and beauty, and this is generally impossible to secure in the market. Fruit picked for shipment to distant markets, cannot be allowed to reach perfect maturity, and the damages incident to transportation and sale destroy most of that delicacy of beauty and flavor belonging to fine fruits, before they reach our tables.

But more important than these considerations of health and physical enjoyment, I would suggest the moral and æsthetic value of growing fruits, to one's family and one's self. Good fruits are a civilizer. They appeal to every finer faculty. They are especially an educator of children. We all look back to those days when we played in the green shadows of the old apple trees, or shook down their crimson burden in harvest time, as among the brightest and most sacred of our childhood. The man who fails to plant a market orchard, may not be impeached for neglect of duty; but any man, who, having land and a family, neglects to plant fruit trees, is morally guilty: for beyond all pecuniary interests, the use of fruits is essential to health; and the beautiful and varied lessons of their growth contribute to the finest moral culture. So let every owner of a bit of land plant

"Fruits that shall swell in sunny June,
And reddens in the August noon.
And drop, as gentle airs come by
That fan the blue September sky:
While children wild with noisy glee
Shall scent their fragrance as they pass,
And search for them the tufted grass."

As I would have the largest possible number of the people grow fruits of all kinds for home supply, I write these lines to encourage a more general planting of peaches,

even in those districts where they need some artificial protection. Hence, I say that the right location in which to plant peach trees, in sufficient number for family supply, is on every man's farm, and in every garden of reasonable extent. There are few locations, indeed, within the limits of our republic, elevated mountain sites excepted, where a very moderate expenditure will not fit the soil for a few trees, and guard them against extreme and destructive cold.

Peach trees, while having considerable choice of soil, will, nevertheless, grow in almost any soil capable of sustaining other vegetable growths, if it is not excessively wet; and this difficulty can be overcome, in most cases cheaply, by drainage. Our American summers are everywhere long, warm, and bright enough to ripen peaches very perfectly, if we can only preserve the trees and fruit buds through the severe winters of the North. This has been done in a sufficient number of cases to justify the declaration that it can be done generally along our Northern borders. The well-ripened wood and fruit buds of the peach tree will generally endure the cold of ten to fifteen degrees below zero without injury, especially if protected against severe and drying winds. Large crops of peaches are annually grown in orchards exposed to this degree of frost. Any method of protection which will shield the trees against a greater degree of cold than ten below zero, will doubtless carry a crop safely through. Several plans have been adopted with success. A long tried plan is to grow the tree against the southern side of the wall, which is the universal custom in England, and in portions of France. The branches are trained along the wall horizontally in both directions from the stem, and fastened occasionally to hold them in place. Corn fodder or straw may be packed against the trees before very cold weather, and held in place by poles, or in any cheap way. The wall may be simply a close high board fence, backed with earth or sods; or trees may be trained to a trellis like grapes, and protected as above; or they may be branched a few inches above the ground, and the branches trained horizontally very near the ground by tying to stakes, and protected by covering with straw. Trees grown in either of these ways, may be protected from the ravages of the curculio, by the Ransom process of trapping, so often described. Again, trees may be grown in large pots or tubs, as they are for glass-house culture, and moved into the cellar for winter, and plunged in the soil in summer. This plan dwarfs the trees, which is favorable to early fruiting: they are easily managed, and are very pleasing objects in the garden. Either of the methods of artificial culture suggested, possesses the obvious advantage over open orchard culture, that the winter protection can be retained until the danger from spring frosts is passed, giving a great certainty of crops. This security of crop will go far towards balancing the expense of protection. I have known years of general failure of the peach crop in the West, when some such measures as above suggested, would have proven remunerative in saving a crop for market. A small number of bushels of fruit, at ten dollars per bushel, would pay more net cash than some full crops in large orchards have done. But I assume that it will always pay the lover of choice peaches to produce them at this extra expense, in any neighborhood where they cannot be grown in the open garden.

South Pass, Ill., December, 1872.

Quality of Baldwin Apple. Preparing Yarn for Root Grafts.

BY J. A. D.

WHATEVER may be said of the quality of the Baldwin apple in the Eastern States, it certainly falls below a satisfactory standard in this vicinity, particularly when grown on over-loaded trees—which they are pretty sure to be when the trees get age, unless they are thinned, which they are very sure not to be. But on account of its early bearing, great productiveness and uniformly fair surface, more of this variety is planted than any other, and poor as it is in quality, the demand for the Baldwin in market exceeds any other variety.

It is remarkable how little the consumers depend on their own taste, and how much they are influenced by the frequent mention of a variety in the selection of fruit; not knowing that it is the producer who talks and writes most about varieties, and that he is governed in planting altogether by the productiveness and attractive appearance of a variety, caring little about quality so long as the consumer is satisfied.

Preparing Yarns for Root Grafts.

Last winter, observing a nurseryman preparing cotton yarn for tying root grafts, by drawing the thread singly through the melted wax, I suggested the cutting of the skeins in suitable lengths and dipping both ends about one and a half inches in the wax, and pressing with a case knife against the side of the kettle to squeeze out the surplus wax. The experiment was tried and found to answer as well as the all-waxed yarn, and not one-tenth part of the labor to prepare it.

St. Joseph, Mich.



Apple Worm.

EDITOR HORTICULTURIST: The apple worm, or larva of (*corpocapsa pomonella*), by Dr. J. Weed, in your September number, is truly a valuable article. Too much cannot be said on the subject. The necessity of keeping the matter before the lovers of fruit, to arouse them to action, is self-evident. I have captured and destroyed the worm for several years; first tried hay bands, and other material, but have settled down on old wooleu rags, of any width, and long enough to reach around the tree and tuck in. I have taken and counted about 3,000 on forty young trees, this season, commencing as soon as the worm leaves the apple, going over and destroying them once a week, continuing as long as there is fruit on the trees.

I have discovered a parasite on the larvae in the person of a (*gordius*) hair worm; have found them in the larva, taken from the inside of the apple, therefore think there is no doubt of the fact.

For one, I am looking forward to the time when our inventors will discover some means of destruction, as yet unknown to us. Horticultural friends should create a fund sufficiently large to pay for the operation of brains on the subject. I will deposit ten dollars for one.

P. H. FOSTER.

Babylon, Long Island.

The title page features a highly ornate, decorative border with floral and scrollwork patterns. The main title 'THE WESTERN HORTICULTURIST' is written in large, bold, serif capital letters, with 'THE' in a smaller oval above 'WESTERN'. Below the main title, 'MARK MILLER' is listed as 'EDITOR' and 'DES MOINES, IOWA' is listed below 'EDITOR'. A small inscription 'H.W. TROY-DES.' is visible at the bottom of the editor's name. The entire title is set against a light background with dark, detailed line work.

THE WESTERN HORTICULTURIST

MARK MILLER
H.W. TROY-DES.
EDITOR
DES MOINES, IOWA
E. SEARS, SC.

Acknowledgment of Fruits.

WE are under obligations to many of our horticultural friends for specimens of fruit, and for which all have our thanks, though in some cases we are a little tardy in acknowledgment:

From Mr. O. F. Brand, Faribault, Min., we have the Saxton, with specimens of several other varieties. The Saxton was past its prime. Of the other specimens, No. 1 is too sour for pigs—must be remarkably good in tree, and bearing qualities to be worth a name anywhere. Another specimen appears like Willow Twig, immature and not colored up like ours. Neither of the apples thought to be Roman Stem and Gravenstein are correct. The former is more sweet than sour, and otherwise unlike the Roman Stem, while the latter has neither outline, color nor the flavor of the true Gravenstein. Other specimens in the collection are beyond our recognition, are evidently seedlings; with this collection Mr. Brand writes:

"I will send you a list of apples that I know, from my own personal knowledge, are hardy and valuable in this State—Tetofski, Duehess, Red Astrachan, Saxton Haas, Famense, Price's Sweet, Tallman Sweet, Golden Russett, Perry Russett (not prolific), Ben Davis. In the line of pears, Flemish Beauty is also a success."

From H. S. Williams, Glenwood, Iowa, several specimens: No. 1, a seedling and a most remarkable apple, shall illustrate and describe in a future number; No. 2, a large apple, flattened, one-sided and colored up much like Ben Davis; No. 3, Lahelia, "Long Island Greening," is unquestionably a seedling; the name must be local, a poor apple, even for a seedling, nor can we say anything more flattering of No. 4; No. 5 appears like Kaighn's Spitzenburg in every essential.

From H. A. Terry, Crescent City, Iowa, fine specimens of seedling fruits, grown upon his grounds. Mr Terry has probably given more attention to the production of new varieties of the apple, peach and plum than any other man in the State, and to which reference will be made at another time. Among his seedlings are some sixty varieties of Crab, and one large fine peach, in particular.

From D. B. Clark, Council Bluffs, a fine collection of apples of five sorts. They are all evidently seedlings, are large and of fine appearance and good. Though we might plant sparingly, if at all, of any one of these sorts, yet, if we had an orchard of such already in bearing, we should regard it a prize.

Twenty years ago, Mr. Clark settled upon the farm he now occupies. The first thing done was to plant an orchard of some three hundred trees, with belts of cotton-wood on the west, north and east; no inconsiderable portion of the trees turned out seed-

lings, but fortunately the trees are hardy, good bearers, and the fruit, as a general thing, of a size and quality to find ready sale in the market, at little, if anything, below the best market prices.

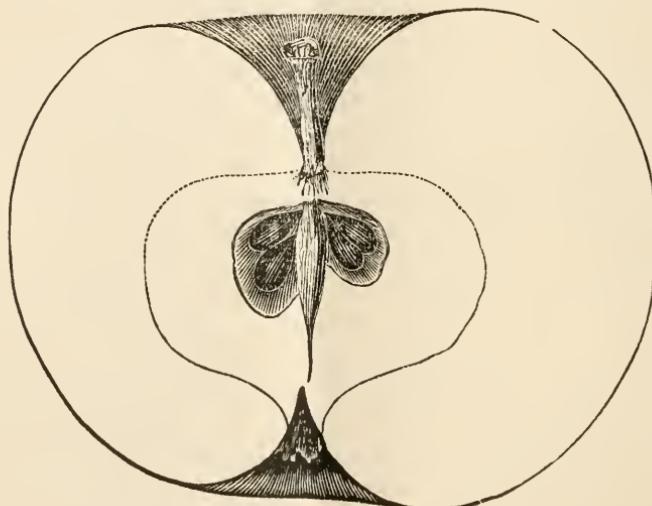
The apples are all fine in appearance ; one is nearly a fac simile of the Swar, three and three-quarter inches in diameter, of a golden-yellow, speckled with greenish-grey dots, but come to the "innards" we find it a different thing—open core, etc.



A Valuable Seedling Apple.

At the late meeting of the Illinois State Horticultural Society, Mr. J. C. Hammond, of Warsaw, Ill., handed us a seedling apple, from which the accompanying illustration was copied :

Description.—Size large ; form one-sided, flattened ; skin pale-yellow splashed with carmine ; stem medium in length, stout ; core small, seeds pale-brown, small ; cavity



Seedling Apple.

narrow, deep ; basin medium ; calyx closed ; core surroundings distinct ; flesh white, tender, breaking very juicy ; sub-acid ; flavor excellent ; season January.

The attention of the society was called to this new seedling for the first, and we believe it was conceded, by all who tried it, better in quality than Ben Davis, and if anything, more attractive in appearance. Mr. Hammond kindly favors us with the following account of its origin and characteristics of tree :

MARK MILLER :—I have made some inquiries in relation to the seedling apple, exhibited at the late meeting of our State Horticultural Society, and find the following to be its history :

About the year 1838, Col. Samuel Chandler removed, with his family, from Muskingum county, Ohio, to Hancock county, Illinois. Mrs. Chandler brought with her a quantity of apple seeds, which she planted in the garden, where they were permitted

to grow until 1843 or 1844, when she gave a number of the trees to a relative, Mr. Rodolphus Chandler, who was then planting an orchard on the prairie, five miles east of Warsaw. And this apple is the production of one of these trees.

Mr. Chandler has for many years considered this the most profitable tree in his orchard, and has top-grafted quite extensively from it. The tree is a vigorous grower, healthy and hardy, and an annual bearer of fruit, always fair and of uniform size. The tree produced, the past year, twenty-five bushels of good marketable apples. It is a late bloomer, blooming two or three days before the Rawls Jannet.

I am not so well informed in relation to its keeping qualities, but Mr. Chandler informs me that he has often kept them until April, which would indicate that they are one of our best keepers. If it should prove to keep as well as the Ben Davis and Willow Twig, it will be a great acquisition to our market list, as it is apparently as hardy and productive, and greatly superior in quality to either of these varieties.

The Warsaw Horticultural Society, at a late meeting, after a full discussion of the subject, decided to name it Illinois Pippin. Perhaps we may be accused of presumption in giving an apple, so little known, such a high-sounding name, yet we believe that it will yet be an honor to the State that gave it birth.

Warsaw, Ill.

A. C. HAMMOND.

The European Larch—Its Durability.

BY ROBERT DOUGLAS, WAUKEGAN, ILL.

ED. WESTERN HORTICULTURIST: I read Professor Matthews' article in the May number of the *Pomologist*, also G. B. B.'s reply to it in the September number of THE HORTICULTURIST. I have not the May number at hand to quote from, but give the substance of his argument, *i. e.* that the European Larch, as grown in Europe, is a resinous tree, but as grown in this country it is not a resinous tree. This theory, coupled with the fact that the Professor had cut down some larch saplings and used them for grape stakes, and found that these saplings rotted off at the surface of the ground within three years, led him to the conclusion that the Larch is no more durable than the cottonwood.

To bring this matter more clearly before your readers, I will make the following quotations from G. B. B.'s article in the September number of THE HORTICULTURIST, whose experience is identical with the Professor's: "In the spring of 1860, I imported a lot of European Larch from Scotland, and set them out in nursery rows two feet apart, intending to transplant them in a year or two, but leaving home next season, and being gone several years, the larch grew up a perfect thicket, twelve to fifteen feet high. In 1867, on reading some of the fabulous accounts of the durability of the larch, and wishing for some vineyard stakes, I concluded to cut down my beautiful grove or thicket of larch and use them for that purpose, thinking I had got something that would last a lifetime; but lo! I was sadly disappointed, for only two years afterwards I found the stakes beginning to break off and decayed near the surface of the ground, so I concluded that the best use I could put them to would be to burn them for stove-wood; but here I was again disappointed, for I found that it required more kindling wood to get them on fire than they were worth."

"Since then I have seen it stated that in Europe it was considered almost fire-proof, and was used for the decks of vessels on that account. Now if it contains such an amount of resinous matter, as some say it does, why will it not burn? That it does not contain much resinous matter grown in this country is certain, but that it is not durable on that account does not necessarily follow, for we find the Red Cedar, the most durable of all wood, contains little or none of this property. We also find that the sap-wood of the Red Cedar decays very easily, and that it is the heart-wood that lasts so long. So I think we will find it the same with the larch, and we should not be too hasty in condemning it, judging from the experiment we have made with nothing but saplings, only three or four inches in diameter."

In the December number of **THE HORTICULTURIST**, just received, the Professor has another article on the same subject, in which he says, he does not see any point upon which he and G. B. B. will materially differ, yet he seems to differ in almost every essential point. He says he thinks the claim made for the durability of the European Larch rests entirely on its resinous properties. He says he thinks there must be some mistake about its burning properties in Europe, and further says: "It is well understood that Venice turpentine is manufactured from the wood of the European Larch, and I am quite sure it will burn."

After looking his December article carefully over, I do not see that he has advanced anything new, it is substantially the same as his May article.

G. B. B. candidly admits, in his September article, that he has had little experience with this tree, aside from the experiment quoted above, from which he has drawn such strong common sense conclusions, that we agree with the Professor when he says: "When such gentlemen take hold, we have a fair prospect of getting to the bottom of the question at issue."

On looking over the Professor's two articles, we are led to the conclusion that he has had no more experience with this tree than G. B. B. has had, therefore let us look a little further and see how the matter stands, as regards the differences between the European Larch grown in this country, and grown in Europe. To begin with, we fully admit the truth of what Loudon says—as quoted in the Professor's article—and we will go further, and admit that both resinous trees, and many trees not resinous, "are of greater durability, when grown in cool climates, and in hilly and poor districts, than when grown in rich soil and in warm climates." This is a fact so well-known, that many of our Illinois tree growers have been collecting information for several years, in regard to the larch and other trees, endeavoring to ascertain how far north and south they can be grown in a healthy condition, and they have already found that the European Larch is quite as vigorous at Louisville, Kentucky, as in this climate, and judging from a tree eighteen inches in diameter when cut down, the timber is similar to that grown in Europe and in this State.

The resinous properties of the European Larch.—I do not recollect of ever seeing but one instance where a European writer ascribed the durability of the larch to its resinous properties, and that was in the case of a log-house, that the author claimed was preserved from decay by the resin, that had formed a coating over the surface of the logs; but we need not go to Europe to test the preservative properties of the resinous matter in timber; our own Balsam Fir has a bountiful supply, and yet it

decays sooner than almost any other tree. We might cite cases almost without number, leading one to the same conclusion, so we are led to believe that the Professor's resinous theory has but little weight. Then to show him that the assertion of G. B. B., that it does not burn readily in Europe is not a "mistake," and that it is not, by any means, a recent discovery, but has been long known on both continents, I take the following quotation from A. J. Downing's *Landscape Gardening*, fourth edition, published in New York, and also in London, in 1849:

"Vitruvius relates that when Caesar attacked the Castle of Larignum, near the Alps, whose gate was commanded by a tower built of this wood, from the top of which the besieged annoyed him with their stones and darts, he commanded his army to surround it with fagots, and set fire to the whole, when, however, all the former were consumed, he was astonished to find the larch tower uninjured.* The wood is also recommended for the decks of vessels, and the masts of ships, as it is little liable either to fly in splinters during an engagement, or to catch fire readily."

Having endeavored to show that the larch is disinclined to burn in Europe, where the Professor admits it to be a resinous tree, we will proceed to discuss its resinous properties in this country.

I have a European Larch tree standing near a walk remote from the house where it is desirable to have a seat, so a few years ago I trimmed it up eight feet, and cut off the top about twenty feet from the ground, thinking this would cause it to extend its upper branches, and make more shade. We had to remove the seat owing to the resin (or Venice turpentine, or Manna of Briancon, all of which are said to be products of the larch tree). This resinous substance exudes some yet, so that we have put a back to the seat, to guard visitors from getting resin on their backs. This tree is fourteen or fifteen inches in diameter, two or three feet from the ground.

Judging from a Norway spruce tree, about the same size, and treated in the same manner, I would say that this resinous substance is much more copious in the spruce than in the larch.

I think the Professor may infer that the resin is not found in great quantity in the larch as grown in Europe, from the fact that although laborers are very poorly paid where the Venice turpentine is manufactured, yet the article is quoted at eight to ten times the price of other turpentine.

In the Professor's December article he says: "But should there be found at the heart of these trees resin or turpentine, would it not be like owning a tract of land covered by other person's farm?" "How are we going to get at it or make it useful?"

To get him out of this dilemma, we would advise him to adopt the method practiced in Europe. There the full grown tree, in its native districts, is pierced to the center with an auger. The turpentine is conducted by a tube into a trough, and it requires no other preparation to fit it for sale, than straining through a coarse hair cloth. The annual product of a healthy, full grown tree, is said to be from seven to eight pounds weight. The turpentine flows from May to September. Under these circumstance, of course no land owner in Britain or in this country, would think of extracting turpentine from his larch trees.

I do not think that any European writer has ever asserted that larch saplings, or

* Newton's Vitruvius, p. 40.

any other saplings, are very durable when placed in the ground *in an unseasoned state*, or even when seasoned, yet I think some men have understood them in this way. It is stated that they are used for sheep-flakes, used to fence in sheep, but as I understand it, these are portable fences, put together in lengths (hurdles), and that they are attached to stakes driven into the ground. We are told that it is used for palings on rustic fences, and lasts a long time, but I see no account of its being used in the ground till it becomes large enough for hop poles.

We are told by all the European writers that it is durable for posts and in all structures where it comes in contact with the ground; also for railroad ties, mill axles, ship building, for lintels, joists, rafters and the main timbers in buildings, but that it is not used for finishing lumber, owing to its being harder to plane than spruce and pine lumber.

European writers tell us that larch timber is not so durable nor so healthy when grown on low moist ground as on high dry ground, and as far as I know, this fact has been over and over again stated by most writers who have recommended the larch in this country. For the past few years western tree planters, and especially Illinois tree planters have been exchanging samples of European Larch wood taken from trees eight to sixteen inches in diameter. I have samples before me from Lake, Lee Kane, Bureau, and other counties in this State, grown on sandy land, stiff clayey land, ordinary prairie and low prairie, all healthy except one tree which was planted by A. R. Whitney, about twenty years ago. Mr. Whitney sent a sample of the wood to me, inquiring if I knew the cause of its death. The wood showed that the tree had been diseased for years. I went to Mr. Whitney's and examined the tree and the ground on which it was planted. To use Mr. Whitney's own words, he said that when he received the tree he knew very little about the habits of the European Larch, and it looked so much like the American or Tamarac, that he planted it on the edge of a slough, and our examination proved that the tree stood with its roots in stagnant water.

I am glad, however, to be able to state that Mr. Whitney planted a goodly number of larches, soon after planting the one named above, and put them on higher land. A section of one of these trees, fourteen inches in diameter, was exhibited by him at our Northern Illinois Horticultural meeting, two years ago. He has so much faith in the durability of this timber, that he used them for posts on which he has erected the present year one of the largest, if not the largest, fruit-house in the northwest.

Samuel Edwards tells me he has a European Larch over a foot in diameter, growing finely on quite low land. I think it will become unhealthy before it reaches its full growth, and would strongly advise planters against putting this tree on low, wet ground, and I have used every opportunity to advise planters against this practice. European writers caution against planting where the roots will come in contact with stagnant water, but they seem to agree that some of the finest trees in Britain stand in proximity to running water.

The larch begins to form heart-wood when younger than almost any other coniferous tree, not excepting the red cedar, but of course the more rapidly the tree grows, no

matter what the variety may be, the more sapwood will it show as compared with slower growers of the same variety.

Who would expect to find well-ripened wood in trees grown in the nursery a few inches apart, in rows two feet apart, till they were twelve to fifteen feet high, as G. B. B.'s trees were grown, in what he rightly terms "a perfect thicket?" The Professor's trees, as he made the statement to Mr. Whitney, "were grown on rather low, very rich soil, making an annual growth of four to six feet, and were about as large as his wrist." In either of the above cases, there could scarcely have been over an inch of heart-wood. I think G. B. B. told me, while attending your meeting, that there was about an inch of heart-wood on some of the stakes he took up.

I give below the measurement I have just made of several cross sections of larch wood, with the amount of heart-wood and sap-wood each sample contains:

One section 13	inches in diameter,	10 $\frac{1}{4}$	inches heart-wood,	2 $\frac{3}{4}$	inches sap-wood,
"	9 $\frac{3}{4}$	"	8	"	1 $\frac{3}{4}$
"	8 $\frac{3}{4}$	"	6 $\frac{3}{4}$	"	2

¶ The thirteen-inch tree stood in a soil of sandy loam (quite sandy); it had been transplanted several times while young; it increased its diameter ten inches during the last twelve years. The nine and three-quarter inch tree grew on a stiff clay soil (a white oak knoll); it increased its diameter only eight inches during the past twelve years. The eight and three-quarter inch tree grew on prairie soil; it was planted at one year old, and stood twelve years after planting.

The above show more sap-wood than any other samples I have of the same age (only excepting the nine and three-quarter inch tree). The increase of growth is a fair average of all the samples on hand. I have some that show a larger growth than any of these, and none other that show so poor growth as the nine and three-quarter inch tree.

If any one will produce any other species of tree that will show as much growth of such hard and durable wood, of the same age, that will grow in this climate, I will commence its propagation on a large scale, and will be willing to give him a reasonable percentage on the gross sales, to pay him for the right of discovery.

I know no other tree of its value for the purposes named, and the same claims are set up for it in Britain, where it has been planted in forest by millions for more than a century, and has proved that no other tree can be grown that will produce so much valuable wood to the acre.

It is about time that our oldest tree planters should begin to understand the various uses to which the different kinds of timber is adapted. I listened to a discussion last winter in which yourself, G. B. B. and the Professor participated, or were all present at least, when most of the above points were brought out. One of your members, a gentleman of extended experience in forest culture, contended that the larch is the most profitable to plant, therefore we should plant the larch to the exclusion of all other trees; in this I entirely disagree with him; there are many uses to which the larch is not at all adapted, the purposes for which lumber is wanted are innumerable, and most of our forest trees have some uses for which they are better adapted than any other kind.

Some claim that the larch is never unhealthy, and never attacked by insects; this

is not so. There is no tree, or anything else that has life, but that is liable to disease, and to the attacks of insects, and to die from causes beyond our comprehension and beyond our control. I believe the larch to be as free from disease as any other tree in the west, as free from insects, and better adapted to the purposes for which it is recommended, than any other tree of which I have any knowledge, and I am inclined to believe that when the Professor cuts down and examines his larch tree twelve inches in diameter, and saws and planes a piece of the wood, he will no longer compare it to the cotton-wood.

The Eumelan Grape in Minnesota.

BY PETER M. GIDEON, EXCELLSIOR, MIN. .

ED. WESTERN HORTICULTURIST: The Eumelan Grape having done so well with us for the last two years, I would call the attention of your readers to its great value. Of all black grapes that I have seen or tested, the Eumelan is the earliest, best table grape, splendid in bunch and berry, very saleable, first in market, a prodigious bearer, always ripe before early frosts, strong grower, hardy vine, ripens more wood than any other vine we had; notwithstanding it yielded double the fruit of any vine of its size, the yield being near seventy-five pounds, every bunch ripened up evenly, though only ten feet of space on trellis, whilst two Coneords, same age, each nearly as large, with thirty feet on trellis, yielded only about twenty pounds, same soil and culture, less in bunch, and not so good in quality. Evidently the Eumelan is the grape for the North, safe in all seasons, and no dropping of berries if left out as late as any grape dare be left out doors. But as to its wine qualities I can't say, don't care; grow grapes only for the joy and comfort of home. If short of space, the Eumelan is the grape, gives the greatest yield, sure to ripen, and most luscious of all black grapes I have yet seen. But if there is space, and a variety is wanted, then for quality and a sure crop, early to ripen, the Croton has no superior amongst the white grapes, so far as we have tested. And of the red grapes, the Iona is our best, though not so early as either of the preceding, and requires a southern exposure, well sheltered from cold winds, a good warm soil, with clay, or better, clay and gravel, to insure well ripened fruit every year. But when ripened, as ripened on our grounds, its truly luscious, keeping well into winter in an ordinary room, on shelves or in baskets, gradually drying into good raisins without the addition of sugar. We have many other varieties on trial, but those recommended are the best, yet so fully tested on others will report in due time if deemed worthy. Yet still onward, wedded to none, keeping the best of the old till we get a full supply of better, ever trying the new as they bid fair to outstrip the old.

No family need be without a full supply of grapes that have twelve inches of land outside the walls of their house, if they but have the energy to set and cultivate; and a pleasure too in doing the work, the contemplation of adding taste and luxury to home and family.

Western Michigan—A Favored Fruit Region.

A T a meeting of the Michigan State Pomological Society, not long since, Mr. J. S. Linderman, of South Haven, presented a most valuable and interesting paper upon the climatic influence of large bodies of water, and the peculiar adaptability of the country bordering the eastern shore of Lake Michigan, for the production of fruit, especially the peach. Mr. Linderman's observation upon peach growing, and the indications of the thermometer east and west of Lake Michigan, are of no ordinary interest. He says,

"It is now a well understood fact that but very few, if any, inland localities in this latitude can produce this fruit with sufficient certainty to warrant its extensive cultivation. The interior of New York formerly produced it in abundance and with tolerable certainty. Now but a few favored localities produce it to any extent. So of the interior of Ohio, Indiana and this State. There is no lack of soil adapted to the growth of the peach in nearly every township of all the States named; but it is very susceptible to atmospheric changes. It succeeds perhaps in fewer localities than any other fruit grown to any extent in this latitude.

On the east shore of our great equalizer, Lake Michigan, we have a climate and soil peculiarly adapted to fruits, particularly the peach. Experience has proved, and the record shows, that at South Haven we are subject to a less degree of cold in winter and heat in summer than perhaps any other locality in this latitude, east of the Rocky Mountains. I think very few are aware of the difference in temperature in different localities on the lake shore; also the difference on the lake shore and in the interior. I have taken quite an interest in this subject for a few years, and will give you some comparisons, the better to illustrate this part of my subject.

Five years ago last winter it was from 17 to 22 degrees below zero in the interior; the coldest at our place, just zero.

December 25, 1870, at St. Joseph it was eight to nine degrees below zero; just zero at South Haven.

December 22, 1871, reported by Mr. Brown, President of St. Joseph Fruit Growers' Association, at 13 degrees below zero; by Hon. John Whittlesey at 15 degrees below; at Coloma, 18 degrees below; at South Haven, six observations varied from one to five degrees below. Five was the lowest I heard mentioned; that was my record.

February 5th, last, at Kalamazoo, it was 16 degrees below zero; 15 to 18 at St. Joseph, and from two to five below at our place. For three winters before the last it has been below zero but twice.

To arrive at a correct idea of the protection our lake affords us, we must compare our record with that west of the lake.

Beloit, Wis., is on a line directly west of our place, sixty miles from the west shore of our lake. February 11th, last, at evening, it was 38 degrees above zero; the next morning six degrees below, making a change of 44 degrees in one night. At our place the record was as follows: February 11th, evening, 36 degrees above zero, two degrees cooler than at Beloit at the same time. Morning of the 12th, with a stiff west wind, 34 degrees above zero, making 40 degrees warmer than Beloit, but blowing

hard, with some snow, and getting cold fast; at noon, thermometer 18 degrees above zero. It continued to grow cold for 36 hours, when it was only eight degrees above zero; making our change in temperature 28 degrees in 36 hours, against 44 in a night at Beloit; our change was gradual compared with theirs, and was 14 degrees less. There is not a winter passes but they have it from 15 to 25 degrees colder than we do. At the time above mentioned there was a change of 51 degrees the same night in Missouri.

The inquiry will naturally arise, on what ground do we claim this superiority of climate, and what proof do we offer to sustain our claims? My answer is this: First, the record of the thermometer, as stated above. The second proof is theoretical. The open, unfrozen water of the lake, is the source of our protection. The prevailing winds in the winter, in our cold spells are almost invariably from the west, westerly or southwest, the latter the most trying of all. The lake at South Haven is about 22 miles wider than it is 20 or 25 miles further south: and the wider the surface of unfrozen water the greater the amount of protection, the water being warmer than the atmosphere. The warmer air from the surface of the water being lighter than the cold air, rises constantly, and has a tendency to reduce the temperature. As proof, note the difference between Beloit and South Haven. I have no doubt that, if the lake had been frozen over, our change would have corresponded with theirs. The difference can be accounted for in no other way. We have from 60 to 100 miles of open water between us and the extremes of cold west, northwest or southwest, while those further south have much less protection, except from the north and northwest. Another great advantage we derive from our lake is the moist atmosphere, both summer and winter. I think that a great advantage to our fruit, especially in extreme drouth in either hot or cold weather."

Plum on the Peach.

IT appears, from observation and trial, that some varieties of the plum do better worked upon the peach than upon its own stock. Mr. J. S. Downer, of Kentucky, writes us, in a note upon the Wild Goose plum, that "worked upon the peach, the tree fruits earlier and more abundant than when grown upon the plum stock." Mr. F. K. Phoenix, also a good authority, writes to the *Western Rural* upon the subject:

"I have tried plum on peach for several years, and find that of those varieties that will grow on the peach, the trees seem quite as healthy, productive and long-lived as those on the plum root. Have several times noticed that when planted deep enough, the plum stock threw out roots, and so grew to be plum on plum—in fact, plum on their own roots. The plum usually strikes root easily. Lombard, Smith's Orleans and Washington, with me, refuse to grow on the peach, while German Prince, Yellow Egg, Imperial Gage, Bradshaw, Reine, Claude de Bevay, Coe's Golden Drop, Miner, Wild Goose and many others, do very well on the peach. On the peach the growth is often stronger than on the plum; in fact, so very strong that, while rankest and most tender, the buds suffer severely from high winds, unless staked.

Horticultural Notes.

Credit.

The article in December number, on Raising Cuttings, was written by Dr. Wm. M. Howsley, and should have been so credited.

Notes on Fruits from Texas.

William Watson Brenham, Washington county, Texas, writes us: "Nearly all the summer and early fall apples do well here, and for winter. Ben Davis, Rawles Janette, Shockley, Romanite, Equeonetell (or as you call it, Buckingham), are fine here. Nickajack is also good.

As for pears, I think this promises to be our best fruit—more certain than the peach. I have never seen any disease on either the pear or the apple here, during a residence of fourteen years. Dwarf pears do best with me. I have planted 1,000 dwarf trees in my own orchard, and only 100 Standards, Bartlett, Clapp's Favorite, Duchess d'Angouleme, Flemish Beauty, Boussock, Howell, Onondaga, Beurre d'Amalis, Seckel, all do fine here.

Keeping Grapes.

At a late meeting of the Alton, Illinois Horticultural Society, a member remarked that he had no trouble in keeping grapes sweet and good till the first of April. Pick carefully, spread in garret to shrink several days, and then pack in shallow boxes about five inches deep, holding twenty-five pounds each, and lined with paper. In spring the grapes come out good and sweet, though somewhat shriveled.

Italian Chestnuts.

The *California Horticulturist* notices chestnuts from Italian seed measuring three inches in circumference, raised in Sonoma City.

Zante Currant Grapes.

The *Pacific Rural Press* says; "We have received from the Alhambra Gardens, near Martinez, a box of superb grapes of a number of varieties, including that from which the—so-called—Zante currants are made; the donor is Dr. J. Strentzel. May the frosts of age fall lightly, and render as beautiful the winter of his years, as were the tinted autumn leaves that accompanied the generous gift."

Alternate Row System.

A strawberry grower at Memphis, Tenn. says: "Let others say what they please, but I am satisfied from careful observation that the alternate row system with hand cleaning amongst the vines, letting the runners root, is by far the best system for the South." Yes, and you might have added—for either North or South.

Prize Apples in Michigan.

At a late meeting of the Michigan Pomological Society, premiums were awarded to the following: *Summer*, Primate first, Sweet Bough second; *Fall*, Maiden's Blush first, Lowell second; *Winter*, Rhode Island Greening first, Wagoner second.

Destroying Garden Moles.

A. S. Baldwin, of Connecticut, destroys this pest of the garden with arsenic and Indian meal. One tablespoonful of arsenic is mixed with four times as much meal, with flour and water sufficient to make a stiff paste or dough. This is made into pills the size of a small chestnut. Small holes are made in the main runway with a small round stick, and the pills dropped in.

"Perpetual Summer"—A December Peach.

The Santa Cruz (Cal.) *Sentinel*, of December 7th, says: "How pleasant it is to go into the orchards and vineyards this 7th day of December, and find the choicest varieties of fruits still clinging to the tree and vine, and still pleasanter to know that this is a land of perpetual summer, wherein one may live and enjoy life without experiencing the dreaded winters, so many of us have been familiar with in Eastern homes, but to which he have bid farewell forever."

B. Cahoon, near Soquel, six miles from Santa Cruz, brought to our office this morning, a choice variety of clingstone peaches, quite as delicious as any of the cling variety we ever tasted. The peach was grown from a seedling, and is the lastest variety known; a fine flavored peach that matures in December will be quite an accession to the nurseries of this coast. The sample was plucked December 2d.

The Everlasting Rabbit.

The season now is, when the rabbit comes in for a share of the tree grower's attention. Dr. Howsley, of Leavenworth, Kan., says, for several years he has used with the most satisfactory results, a *white-wash*, composed of fresh slacked lime and soft soap, brought to the consistency of ordinary paint, with common flour paste added to make it adhesive. This composition, applied with a common paint brush has, with me, always been effectual.

Ben Davis and Rome Beauty.

At a meeting of the Alton, Illinois Horticultural Society, Mr. Starr said high prices were now paid in the St. Louis market for Ben Davis and Rome Beauty to ship south, that these two apples are in special demand for the New Orleans market. In the estimation of Mr. Long, Ben Davis stands first. Rome Beauty is also a favorite with him.

Wisconsin Cranberry Lands.

A New Jersey cranberry grower with other parties, have purchased 3,000 acres marsh land in Wisconsin, for the purpose of growing the cranberry. Wisconsin is becoming famous for her hop yards and cranberry fields. But a few years since these marsh lands, now so eagerly sought, were regarded of little or no value, or consequence, beyond what they might have possessed to help hold the world together.

Fabulous Cranberry Crop.

The Maine *Farmer* is responsible for the following: Mr. Clark Stanley, of Porter, has raised a crop of cranberries this year that excels anything of the kind that we have ever seen. He picked this season from a patch of ground that was sixteen feet square, seven bushels of nice cranberries, and there is, at least, another bushel on the vines, that he cannot gather at present for the water. These vines grow partly on ground that has been ploughed, with no cultivation whatever. They are of the Bell variety.



Editorial Notes.

An English Garden Scene.

Carpet Gardening is a term now somewhat in vogue with English horticulturists, as applied to lawn planting and decorations. Our frontispiece, this month, is a scene of this character, taken from the ornamental grounds, at Heckfield Place, Wirksworth, England, the residence of Lord Evenley. Most of the plants used in the low borders, are those known as succulents—Echeverias, Sedumes, also Mesembryanthemums, Sempervivum, etc.; while in the vase, are large specimens of the *Echeveria Metallica*. Such a bed will please many, for the sake of its novelty and curious selection of plants, yet among most American flower lovers, such borders and spaces would be much more satisfactorily filled with plants of deeply colored ornamental foliage; Alternantheras, Dracænas, Centaureas, etc., would all be first chosen. We have but small space here now to refer to this subject, and only commend the plan to American amateurs; a second view, in another succeeding number, will be accompanied with advice as to the selection of plants for such purposes.

A Good Suggestion.

The officers of the American Pomological Society have done wisely, by addressing a circular to its members, soliciting suggestions as to the conduct of its future meetings. As it is probable that at the next meeting of the society, there will be a large attendance, they ask any one interested in its welfare and success, to send them any suggestions as to system or order of daily business. If there are any items which they wish discussed, they will name them distinctly; and also how much time should be occupied over each.

At previous meetings of the society, a majority of the time of the session has been spent in discussing only one or two topics, while others have been hastily passed over, which deserved more than a passing glance. We remind the American Pomological Society, that there is a greater interest now prevalent in horticultural circles, concerning *gardening, flowers, and ornamental planting*, than there is in fruits only. The fever for fruits has been passed (at least here in the East, if not in the West), and we hold the opinion, that the greatest good the American Pomological Society can do, at its next meeting, is to devote ample space and time to a discussion of *ornamental trees, shrubs, vines and new plants*, as well as the varieties on its fruit list. If the present character of the business and purpose of the American Pomological Society, does not permit these topics, then we advocate their incorporation hereafter. The society should be even with the times, not behind it.

An Immense Rose Show.

At a recent rose show in Sydenham, England, there was on exhibition a continuous line of boxes, twelve miles long, each containing forty roses on exhibition.

A New Arboretum.

Charles S. Sargent, who has charge of the new Arnold Arboretum, in Massachusetts, writes that it is a success as far as the peculiarities of our climate will allow. 137 acres of beautiful, undulating park-like ground, have been laid out, a large amount of money is at hand, to spend for planting; there are already plenty of trees upon the tract, which are native to New England. Our best horticulturists are watching the experiments with interest.

The Early Beatrice Peach.

We see this is becoming favorably known in the South. A North Carolina fruit-grower had a quantity of this variety ripen on the 15th of June, of 1872 (or two weeks ahead of Hale's Early), which were shipped to New York, and brought good prices.

Ohio Horticultural Society.

The winter meeting of this society was the best ever held, the display of fruits occupying a table over 200 feet long. Dr. J. A. Warder, the president, exhibited 121 varieties of apples, most of them the produce of his own experimental orchard. The following items show the magnitude of fruit culture in the State:

Number of acres of orchards in the State.....	383,648
Number of bushels of pears, yielded in 1872.....	626,982
Number of bushels of peaches, yielded in 1871.....	860,530

Pear Tree Blight.

A series of interesting experiments have been conducted during the past two years, by William Saunders, on the grounds of the Agricultural Department, at Washington, D. C., in relation to *pear blight*. A pear tree which was badly blighted on its main trunk was made the subject of special experiment. Nearly all of the bark was blighted within three feet of the ground, only about an inch and a half in width being left to connect the upper part of the tree with the unblighted bark at the base. The affected part was removed and the sap-wood left quite exposed to view; but to prevent injury from the air it was at once coated with a composition of carbolic acid, sulphur, and lime, largely diluted with water. After the lapse of two years the tree has wholly recovered, and the denuded part is again covered with new and healthy bark. The tree, in all respects, presents a healthy appearance. Many other trees much affected with blight were coated heavily with the sulphur composition and have evinced marked signs of improvement. It is intended to continue these experiments on a larger scale, until sufficiently numerous and well-established facts attest the best mode of treatment. The Department grounds consist of a heavy, compact, partially underdrained soil, lying low; they are, therefore, unfavorable for the highest development of pear tree culture. It has been only by persistent effort that the fruit trees on the Department grounds have been brought to their present highly improved state.

Training the Wisteria.

One of the handsomest rustic ornaments we have ever seen, was thus simply constructed: A tall red cedar was transplanted from the woods, its branches all trimmed back to within two or three feet from the trunk (broadest at the base near the ground, and tapering gradually toward the top), and all the bark peeled off, leaving the wood entirely bare. Two of these were placed by a gate-way, just within the fence, one on each side of the path.

At their base was planted a Wisteria, which, feeding on rich food, was most rampant in growth, soon reaching to the top with its fast climbing tendrils. The leafy foliage soon covered the extremities of the dead wooden branches, and sending out runners which circled out, and downward, in a pendent form, covered in June with the densest of delicate blue blossoms, made a picture of rare grace, and a unique

rural embellishment. By pinching off the ends of those runners, which hang out from the main stem in half circles, they became more stout, and the entire structure appeared more like a tall shrub, than a vine on an artificial frame. Few know how really elegant such a contrivance is until they have tried it. Among the various plans which gardeners occasionally give us about training vines, is the following: Train the Wisteria to a stake six feet high, and when the main stem has reached the top, head it off. The second year, or the third, will find it able to support itself, and forming an umbrella-shaped head, with hanging flowers. The more we can encourage such little contrivances as these, the greater the pleasure in gardening.

The New Postal Law Concerning Seeds.

More good news! The new Postal Law, passed by Congress, is even more favorable than we supposed; instead of fixing the rates, as formerly, at four cents for four ounces, the rates are now one cent for two ounces, or fractions thereof, and the old limit of four pounds is restored. The following official letter, issued from the office of the P. M. General, sufficiently explains and decides the matter. The credit for the prompt engineering of this new revision, through Congress, is due to Gen. Benj. F. Butler, of Mass., although the measure originated through Mr. Hill, M. C., from New Jersey:

POST OFFICE DEPARTMENT,
APPOINTMENT OFFICE,
WASHINGTON, D. C., Jan. 10, 1873.

Hon. A. C. HARMER, *H. of R.:*

Sir—Please inform your correspondent that this Department, though not officially notified, is advised that the President has now signed the bill recently passed by Congress, whereby seeds, bulbs, roots, and scions are classed with printed matter in regard to postage and weight of packages, that is, one cent for each two ounces, or fraction thereof, limited to four-pound packages, and the same is now the law.

Postmasters will be advised as soon as possible after the official notice from the Department of State is received.

The same law provides that all third-class matter must be prepaid in full by stamps affixed at the office of mailing, otherwise the same shall not be forwarded.

Very respectfully, &c.,

J. W. MARSHALL,
First Assistant P. M. General.



Floral Notes.

Flowering Shrubs.

W. D. Brackenridge, a Baltimore florist, recommends the following flowering shrubs for a family garden:

As shrubs we have first the *Clethra ulnifolia*, whose flowers are white and fragrant; height of bush four to six feet. Then there is the free growing *Vitex Agnus Castus*, better known as the Chaste Tree, and of which there are two varieties, one of them blue and the other pale lilac, both of which should be in every collection of any pretension. *Hydrangea quercifolia* has large branches of greenish-white flowers, and lobed leaves like those of an oak, and is a conspicuous and well-marked article, and so is its congener *H. nivea*, with white flowers and entire leaves, which are green on the upper and snow white on the under surface—both attain a height of three to five feet. *Buddleia Lindleyana* which grows from six to eight feet high, is a very desirable bush, and should be more planted, producing as it does, during most of the summer months, its long pendent spikes of blue flowers, which come admirably into play when making up a table bouquet; to this we would add another beauty, viz.:

Ceanothus thyrsiflora, bearing flowers like an Ostrich feather of a pale blue color. *Spiraea callosa*, *S. callosa alba*, the first bearing pink and the latter white flowers, deserve a place here as well as in every garden.

Belonging to the small tree kind, we recommend *Kolreuteria paniculata*, or Balloon tree, as some people call it, which bears yellow blossoms on long erect spikes; and as a suitable companion to this plant, *Lagerstroemia indica*, of which there are three or four varieties, one bearing pink, another purple, and a third bearing scarlet flowers; we have also got the white flowering kind, but cannot vouch for the latter proving hardy; in truth, all of the varieties require protection during the winter north of Baltimore, yet there is no plant that will better repay a little care than this same *Crape myrtle*. The Althea is a very popular tree or bush, and it embraces a great many varieties, both single and double-flowered; to have these to bloom at the present season they should be headed down or cut back late in April; but apart from the value of the flowers, there are two or three kinds very attractive by their variegated foliage, which latter feature in floricultural productions has of late years claimed more prominence than we think it deserves. While bringing forward to the light the above desirable trees and shrubs, we would, with great respect, remember as seasonable the Virginia and Chinese trumpet flower, the first so well adapted to cover stumps of trees or old walls gone into decay, the last just the thing to plant against a summer house, or as a solitary bush on a lawn, where its robust growth will soon produce a stem strong enough to support its head erect.

Flowers for Window Gardening.

A correspondent of the *Agriculturist* thinks that people who live in the country have no excuse for being without good food for pot plants. Dead leaves and earth or mould from the woods are always attainable. My advice is mainly for dwellers in cities.

First, make your calculations a year ahead. You who have not been accustomed to make plans for gardening, in-doors or out, for a month ahead, need not be discouraged at this. The amateur and professional florist make their plans for a much longer time. There are very few cities where a bushel or two of dead leaves cannot be gathered in the fall from the many trees that line some streets, or adorn your own or your neighbors' yards; but don't be afraid of getting too many.

The older and more thoroughly rotted the manure is, the more valuable, and a bushel or two of leaves will go very far—much farther than you think. Put the leaves in a sheltered place, say against your back wall or fence, and put a board or two over the heap, to shed rain. Then to a bushel of leaves add a peck of loam or garden soil (sods are best), and a half-peck of common sand. Every washing day empty a pail of hot suds on the heap, and stir it as often as possible with a garden fork, hoe, or shovel, or anything else that will mix it up well. Of course, it will freeze up solid many times during the winter, unless kept where it does not freeze, but if you begin now, and stir as often as you can, by next fall you will have the whole thoroughly rotted down. Oak leaves do not rot as quickly as some others, maple, for instance.

My heap was begun last October, and you cannot now distinguish the least form of a leaf in the mass. Although out of sight, under a flight of steps at the back door, it is perfectly odorless, and is springy and spongy—just what is needed.

To recapitulate: A bushel of leaves, a peck of loam or sods, a half-peck of sand are all the important ingredients. Whatever you can add in the way of stray bunches of moss, or bones burned in the kitchen fire and powdered, is so much gain.

When ready for use, sift through your coal sieve (let it be a coarse one), and take one third of the manure and two thirds of the best garden soil you can get, and make your heap for potting. With very few exceptions all plants will thrive in this mixture, and your courage will not be damped by the formidable array of soils paraded as necessary in most works on flowers. Through the winter you will have flowers that

will be the envy of your less energetic neighbors—Geraniums that are Geraniums, Bouvardias and Primroses that no greenhouse need be ashamed of—especially if you have a sunny window. It is of no use to attempt to have winter flowers without some system. Better have none at all than the sickly specimens that disgrace so many windows from November to April.

I do not find in my horticultural reading much said about Geraniums for winter flowering; yet they will be much more satisfactory, if some of the better varieties are tried, than many other plants chosen. Two years ago I gave a lady friend, living in the country, two cuttings of Geranium—one a bicolor (salmon pink, shaded with white), and the other pure white. She has a little winter sitting-room, about nine feet square, with a window each to the south and west. The south one is devoted to flowers, and it isn't worth while to boast of Geraniums unless you could see hers. The first winter they were less than a foot high, the leaves so thickly set that the stalks were not visible, and the horse-shoe or zone on each leaf almost black. They each threw up one cluster of buds, then another, until finally through the greater part of the winter there were always from one to four clusters of blossoms. And such clusters! Nearly as big as your fist, and each floret as large as an old-fashioned cent. The shape of the cluster was such that the flowers seemed to grow in trusses, like the Hyacinth, and hid the stem entirely.

The difference between the summer and winter blooming of the same plants was very marked. Out of doors they bloomed like nearly all Zonale Geraniums; one-half of the florets faded before the other half came out. In the window each cluster would keep about three weeks; if one floret dropped, another came out in its place, or the rest pressed together and filled up the gap. Cuttings from these did equally well last winter. They stood on the window-sill, close to the glass. The room had a wood fire, and was never hot—which last item, by the way, is a very important one for your own health as well as for that of your plants.

Don't let the thermometer get above 65° or 70° at the most, going down not lower than 45° at night if possible. You can easily accustom yourself to the temperature, and will be all the better for it.

Camellia Culture—Use of Lime Water.

Mrs. Geo. W. Carpenter, in *Gardeners' Monthly*, says: In regard to the watering of camellias with lime water, the facts are as follows: The plants are grown in large pots, and have been in them undisturbed for several years; a large reservoir on the place, containing five hundred gallons of water, receives annually about three bushels of lime; before watering the plants, the lime is usually well stirred up with the water, allowing it to settle before use. Lime water was first used to kill worms in the soil, which it effectually did. It has since been continued regularly, the thriving, healthy appearance of both roots and branches seeming to warrant its use.

To Lift a Heliotrope.

With a long-bladed knife cut the soil around the plant—cut deeply and smoothly; water freely. Next day repeat this operation. After sun down, on the third day, carefully lift the plant and place in the pot. Cut the soil near the size of the pot required. Keep the plant in perfect shade for four or five days; keep moist.

Keep House Plants Clean.

The London *Cottage Gardener* thus relates the advantage of keeping artificially grown plants clean:

Two orange trees, weighing respectively eighteen and twenty ounces, were allowed to vegetate without their leaves being cleaned, for a year; and two others, weighing respectively ten and twenty and one-half ounces had their leaves sponged with tepid water once a week. The first increased in weight less than half an ounce each, while of the two latter, one had increased two, and the other nearly three ounces.

Horticultural Notes.

Japan Peas.

The Mobile *Register* says: "We claim the honor of having started the new interest in the Japan peas, and we are really proud of it, for the Japan pea is, undoubtedly, one of the best things climatically secured to the South. It is easily raised, will grow on almost any character of soil, yields heavily, and is entirely exempt from attack by either the pea or the bean weevil. As a food for man we think it has no equal in the pea or bean line, and it makes a stock feed almost equal to corn. Hogs relish it and fatten upon it, and poultry of all kinds seem to want nothing better. Sown thickly upon the land it makes the very best of hay, and a green-feed stock will eat it in preference to anything else."

Apple Tree Borers.

A correspondent of the *Rural New Yorker* says, that he has prevented the attack of apple tree borers by putting a bushel of tan bark around the stem of each tree. The tan bark answers the double purpose of keeping out the borers and a mulch. No weeds grow through it, and the writer states that he has never known a tree to be attacked, with tan bark around it.

Preventing Rot in Grapes.

Dr. A. P. Wylie, of South Carolina, as stated in the *Rural New Yorker*, prevents bunches of grapes from rotting by enclosing them in paper bags, pinned on, with a pinch of sulphur in each. He thinks the preventive may be applied on a large scale.

Bugs.

Mr. Rufus Peet, of Wyoming county, N. Y., communicates the following remedy for bugs upon vegetation:

I have tried the following prescription against bugs, which has proved efficacious with me: Take fine dry dust from a common road, sift it through a fine riddle so as to remove all stones and lumps, and apply freely with the hand when the dew is on the plant. It was with me a perfect success last year. No bug was seen upon squash, melon, cucumber, or pumpkin. Let others try and report.

A Profitable Tree.

W. H. Ragan has pears of the Flemish Beauty variety, grown by his father at Fillmore, Putnam county, Indiana, which grew upon a tree that has for the last seven years yielded fruit, the average sales of which amounted to two hundred and one dollars per year, besides what was required for family use.—*Northwestern Farmer*.

Ashes for Reviving Peach Trees.

S. D. Pratt, of Penn Yan, N. Y., in an article to the *Farmer's Club*, N. Y., upon his experience with peach trees, says:

Remembering Prof. Liebig's theory that, when a vegetable is burned, the part which came from the air in the process of its growth returns to the atmosphere, and the part which came from the ground is reduced to ashes, I came to the conclusion that ashes would be beneficial when applied to the roots of the trees. They were standing in soil strongly inclining to clay, with a turf around them which had not been removed for several years. After pruning them properly, removing every indication of worms, etc., and washing the body and branches with soap-suds, I began operations below—first removing the turf about two feet around the tree, then with a garden pick the ground was loosened from six to twelve inches in depth, taking care not to injure the larger roots. Twenty or thirty quarts of loose dirt were removed, leaving a large cavity, shaped like a saucer, with the tree standing in the center. About one pint of unleached ashes was sprinkled about the tree, and upon this chip

manure was placed, nearly filling the cavity. Another pint of ashes was sprinkled upon the fertilizer, which was gently pressed down, and the whole covered with the loose dirt taken from the cavity, leaving the surface nearly as it was, excepting the turf. A young orchard was treated in a similar way. The effect was wonderful. Plum trees that were "going to the bad," revived. Peach trees that had presented small and shriveled leaves threw out a luxuriant foliage, and cherry trees gave fruit larger and fairer than ever before.

Pleasantries of Rural Literature.

Japanese Dwellings.

THERE are few Japanese dwellings of the middle class which have not their little private gardens, quiet retreats for sleep, for reading, fishing in the tanks, or indulging in libations of tea and saki. The chains of hills which traverse the quarters to the south and west are remarkably rich in rocks, little glens, grottoes, springs and ponds, which the small proprietors combine in the most ingenious manner, so as to give the features of a varied landscape in a limited space. When there is an entrance from the garden to the street, a rustic bridge is thrown over the canal before the portal, which is carefully concealed under spreading trees or thick shrubbery. We have hardly crossed the threshold, when we find ourselves apparently in a wild forest, far from all habitation. Masses of rock, carelessly disposed in the manner of a staircase, invite us to ascend, and from the summit a charming view is suddenly spread out below. An amphitheatre of leaves and flowers incloses a picturesque pond of water, bordered with lotus, iris, and water lilies; a light wooden bridge is thrown across it; the path, which descends to the latter, passes by windings through clumps of bamboos, azaleas, dwarf palms and camellias, then by groves of small pines and slopes of turf or flowers.

The Carnation seen through a Microscope.

It is well known that the examination of flowers, and vegetables of every description, by the microscope, opens a new and interesting field of wonders to the inquiring naturalist. Sir John Hill has given the following curious account of what appeared on his examining a carnation: "The principal flower in an elegant bouquet was a carnation; the fragrance of this led me to enjoy it frequently and near. The sense of smelling was not the only one affected on these occasions; while that was satiated with the powerful sweet, the ear was constantly assailed by an extremely soft, but agreeable murmuring sound. It was easy to know that some animal within the covert must be the musician, and that the little noise must come from some little creature suited to produce it. I instantly distended the lower part of the flower, and placing it in a full light, could discover troops of little insects frisking, with wild jollity, among the narrow pedestals that supported its leaves, and the little threads that occupied its center. What a fragrant world for their habitation! What a perfect security from all annoyance, in the dusky husk that surrounded the scene of action! Adapting a microscope to take in, at one view, the whole base of the flower, I gave myself an opportunity of contemplating what they were about, and this for many days together, without giving them the least disturbance. Thus I could discover their economy, their passions and their enjoyments. The microscope, on this occasion, had given what nature seemed to have denied to the objects of contemplation. The base of the flower extended itself under its influence to a vast plane; the slender stems of its leaves became trunks of so many stately cedars; the threads in the middle seemed columns of massy structures, supporting at the top their several ornaments; and the narrow spaces between were enlarged in walks, parterres and terraces. On the polished bottom of these, brighter than Parian marble, walked in

pairs, alone, or in large companies, the winged inhabitants: these, from little dusky flies, for such only the naked eye would have shown them, were raised to glorious, glittering animals, stained with living purple, and with a glossy gold, that would make all the labors of the loom contemptible in the comparison. I could, at leisure, as they walked together, admire their elegant limbs, their velvet shoulders, and their silken wings—their backs vying with the empyrean in its blue; and their eyes, each formed of a thousand others, out-glittering the little plains on a brilliant; above description, and too great almost for admiration."

How Tree Planting is Encouraged in Europe.

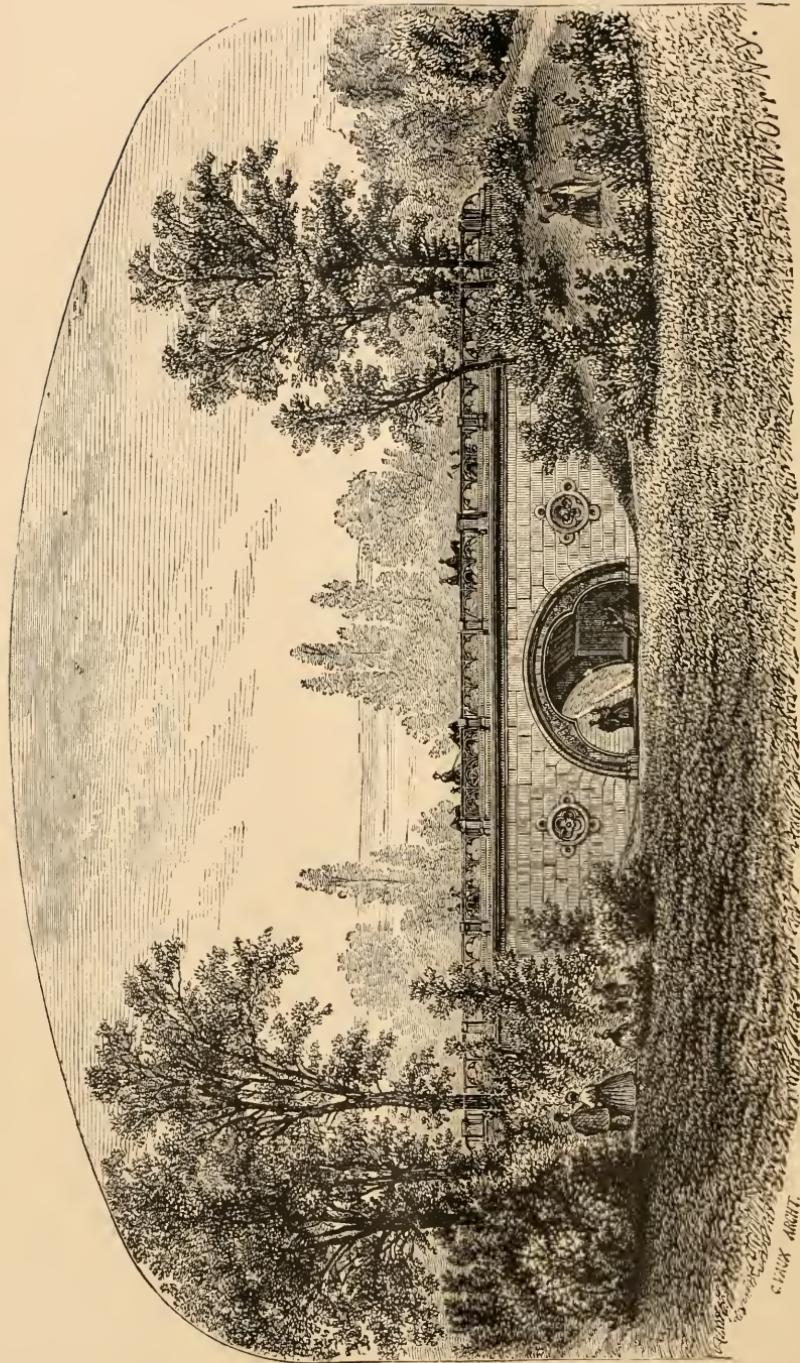
The success of national legislation in behalf of general tree planting, has never been so well illustrated as in Egypt and Algiers.

Egypt, well known for its dry climate after the destruction of its forests, olive and other plantations, had about six rainy days every year on an average; but so many millions of useful trees have again been planted there are now about twenty-four rainy days per year recorded.

There is a man who deserves the greatest esteem from all civilized nations—Napoleon III; who, with all his faults, has given the world an example which, at least, in France, will render his name forever immortal. Convinced of the great benefit the barren and swampy districts would derive if planted with trees, by his command many millions have been planted in vast districts of the country. By his command thousands of acres of the desert in Algiers have been transformed into forests, with trees suitable to the climate, and with surprising results. By their rapid growth a great change of the climate is observable, and twice more rain and dew has fallen in the neighborhood of the young forests than before. By his command, more than sixteen geographical square miles of the swampy and unhealthy country along the coast of the Bay of Biscay, in the Department of the Landes, where swamp fever was prevalent, have been planted with millions of trees, especially the cork-oak and swamp-pine, with surprisingly beneficial results. Not only have these trees drained the land, but they have changed it into a healthy country with fine forests. In Japan a law exists that whoever cuts down a tree is obliged to plant another instead. In Biscay every proprietor plants two for one which he cuts down, and the law compelling this is severely executed.

A Remarkable Tree.

A few years ago, a new species of tree was brought from Australia to Algiers. The ex-Emperor Napoleon, in a recent visit to the Jardin d'Acclimation, at Algiers, was much struck with the rapid growth of this tree, the Eucalyptus Resinifera, or Australian gum tree, which has attained a height of 30 feet and a diameter of six inches in two years. This remarkable tree in its native soil—Australia—sometimes reaches the height of 340 feet, and has been found more than 19 feet in diameter at about a yard from the ground. It often yields planks 200 feet long without a single defect. The wood, notwithstanding its rapid growth, is hard and heavier than oak. It also presents beautiful colors, and is consequently well adapted for cabinet work. An astringent gum, known in commerce as "kino," is obtained by making incisions into its bark. The Eucalyptus is an evergreen; its leaves have nearly the same shape as the laurel. The development of its lateral branches is no less wonderful than its stems. They are small until the trunk attains the height of about 100 feet, when they shoot out almost horizontally, sometimes to the length of 90 feet, giving the tree the appearance of an enormous umbrella. The seed, strange to say, is very small, and not unlike that of the tobacco plant; the flowers are white, of a most agreeable smell, and much liked by bees, which extract from them a most delicious honey.



THE CENTRAL PARK. ARCHWAY UNDER DRIVE.

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Garden Topics.

BY THE EDITOR.

Planting Shrubs.

A MISTAKEN opinion seems to be entertained by many, that any manure will do for trees and shrubs, and the amateur planter, thinking that wood mould, chip manure, and decaying sods from some cesspool will prove desirable, at once uses it freely in filling up the holes dug for the new trees. Perhaps no greater injury has ever been done in horticulture than the recommendation, by inexperienced writers, of *chip manure* as a dressing. Its danger arises mainly from its ready disposition to spread fungi, which inevitably arises in soils naturally a little moist and tenacious. And when once formed, it spreads with astonishing rapidity, totally preventing growth and finally killing the tree or shrub. An instance is on record of an English gardener, who planted two very fine pyramidal white Bigarreau cherries side by side. One grew very well, and answered his expectations; the other, after putting forth its leaves, made no growth; the foliage gradually acquired a sickly hue, despite the most careful of attentions, and at last it was taken up. It was discovered that the roots were covered with a lacing of a delicate white fungus, which had spread to them from a piece of rotten wood buried in the soil. The roots were at once cleansed, and the old earth removed, and fresh loam replaced; but the tree had suffered too much, could not recover, and died a victim to the deadly effects of fungns. Chip manure is the hiding-place, besides of fungus, of worms and insects by the score; and its only possible value can be either through its reduction in the fermentation of a lively compost heap, or in being burned to save the ashes. It is a wise policy *never* to apply it as a fertilizer to the roots of any tree, shrub or vine.

How to Plant Shrubs.

Another point in planting should be well considered, viz.: get your plants into the ground as soon as possible after their receipt. Cover them with soil, even if but

for a temporary day or week ; keep their roots away from the air, the sunshine, the dry cold winds. Nothing injures them so quick and so severely like *exposure* ; and if the planting season is a dry one, watering should not be withheld. Sagacious nurserymen who succeed best in transplanting, *puddle* the roots, rather than water in the open field. Soon after the shrubs are received, a large hole, say six feet in diameter and two feet deep, is made, filled with water, and a rich mud of thick cream consistence is formed ; into this are plunged the roots of the shrubs until they are coated over with the muddy slime, so tenacious as to stick closely to all parts. They are then transplanted directly to their growing place, and experience seems to demonstrate it is the *only successful* way of enabling them to withstand a dry season. While planting, fill in about the roots an abundance of fine rich earth, pack it close and firm, and tread the surface with the foot. A slight mulching is often advisable, with such material as straw or grass, and we have found this particularly necessary with the hemlock spruce. In transplanting a lot just before winter, part were mulched, part not. The former lived soundly through a severe winter, the latter perished. A good snowbank around an evergreen is the very best protection it can have.

A Fine Rose Hedge.

It is tantalizing for us here in America, who have not yet learned how to make successful rose hedges, to read of one in the garden of Right Honorable Lord Middleton, of Applecross, England, which, during the past growing season, was five feet in height and over two hundred feet long, in the finest possible health, and *one sheet of flowers—such flowers!* The variety was Gloire de Dijon, and the hedge was used as a screen to the kitchen garden, and there was no end to the cutting of the roses. These hedges were made by simply constructing a neat wire fence, with five strands ; and as the plants grew, they were fastened to the wires. The shoots intertwined in and out, and among each other, filling the hedge quite compactly, and reaching to the top.

A Beautiful Rose.

In the grounds of one of our New York suburban rural Editors, there bloomed last year a beautiful rose, which seems to have given him an unbounded degree of delight, and to have been the admiration of visitors. His story is told by himself, as follows, in his diary of " Daily Rural Life : "

" My gardener purchased from one of our large florists a dozen plants of a Countesse de Bertha rose, which has proved to be one of the best perpetual blooming sorts that I have seen. The flowers are of a deep pink color, quite large, double and elegant in form, and the fragrance is most exquisite, being entirely undescribable, but may be called a spiced-sweetened Tea. A bud cut off when it begins to open, and placed in a room, will perfume the entire atmosphere within, for one or two days. The plants are very vigorous, not being subject to mildew in the house, and they bloom almost continually ; even small plants struck out from cuttings, bloom when only a few months old. We may have more showy varieties, but there are few that will please better than the Countesse de Bertha."

Grapes for the Family Garden.

It is a question whether the large grower *for profit* enjoys his horticultural work as much as that amateur who takes care of his dozen vines or so, in his garden

Indeed, we rather believe the latter has the most pleasure—certainly less disappointment. When we get this word *profit* expunged from the horticultural vocabulary, and growers learn to value plants for the pleasure they can give, and appreciate their peculiarities and beautiful characteristics of growth, we can hope for a wider spread of horticultural taste.

We are asked the question: Which are the best grapes *for the Family Garden?* We answer briefly as follows:

Do you want quantity or quality? Do you want growth—something sure and reliable—or are you willing to do a little nursing? All these points need considering.

The *Concord* is our old stand-by—sure, safe, reliable, good enough for ordinary eaters. But the amateur naturally asks for something better. Then take the *Eumelan*, earlier still; a fine healthy vine, not as rampant as the Concord, but fully as healthy. Berries are of moderate size, black, shiny, well filled with the most delicious of winy juice; has little or no pulp or seeds, and sweet enough for the birds. The best of early grapes, in our opinion.

The *Israella*, in warm latitudes, is a marked success, and bears the handsomest clusters that ever graced a vine; is fully as healthy and rampant a grower as the Concord, but no better in quality; valuable for its earliness, which is two weeks before the Concord; a few days later than the Eumelan—which latter grape is the best and earliest grape of its season that we have.

The *Ives* is gaining friends daily. This, too, is black, and is adapted mainly to latitudes where the winter climate is moderate.

Among the later grapes, nothing is so luscious and fruity as the *Senasqua*; ripening after all the other black grapes are gone. It hangs tenaciously to the vine, and bears its large round berries soundly to the very verge of winter. It is the perfection of a black grape; seeds trifling and not troublesome; melts in the mouth like globules of nectar, and seems almost to have elements of perfection of flavor.

Next, among the white grapes, who would miss that gentle, sweet and modest *REBECCA*, who bears the neatest of bunches, with berries of clearest white, and flavor so refined? Make a place for that. And who would leave out the *Croton*, that paragon of wonderful hybrids? American vigor, with foreign characteristics; large bunch, somewhat loose; berries medium, white, fine, sweet delicate flavor.

We might prolong this list. Even the *Walter*, and some of those famous hybrids of David Thompson (the Carpenter) might deserve special mention. To any one wishing for agreeable variety, and disposed to consult quality as well as quantity, the above named sorts will not be forgotten. Our summary, then, may be scheduled as follows:

1st best early black grape for the family,	<i>Eumelan</i> .
2d " " " "	<i>Israella</i> .
3d " " " "	<i>Ives</i> .
Best medium " " "	<i>Concord</i> .
Best late " " "	<i>Senasqua</i> .
Best white grape,	<i>Rebecca</i> .
2d best " "	<i>Croton</i> .
3d best " "	<i>Martha</i> .
Best new amber grape,	<i>Walter</i> .

Good new sorts for amateur garden, Carpenter, Telegraph, Salem, Rogers No. 4.

Among the sorts so often praised, but not to be depended upon, are the Iona, which needs a long, growing season, and does not often mature its fruit well; the Catawba, often subject to blight, rot and mildew. The Isabella is still a favorite with old-fashioned families; but with so many new and better sorts of later origin, it is not now to be thought of for a moment.

The Marshal Niel Rose.

It is surprising to see the wonderful popularity and hold that this rose bears among the gardeners and professional horticulturists. In an election of roses, recently held in England, among a list of thirteen voters, the Marshal Niel heads the list of no less than ten of them, its only competitors being *Devoniensis*, *Comtesse de Chabrilant*, and *Charles Lefebre*. In America, as a greenhouse rose, its beautiful bud claims for it first rank as Queen of the Roses; but for outdoor culture there are many other sorts, we believe, far more satisfactory.

New Shrubs.

At the recent meeting of the Western New York Horticultural Society, at Geneva, N. Y., the question was asked: "What newly or recently introduced ornamental trees, shrubs or plants are worthy of special commendation?" The *Deutzia crenata alba pleno*, and the *Deutzia scabra alba pleno* were strongly recommended. Mr. Charlton, of Rochester, had flowered the first, and considered it quite an acquisition. P. Barry, the President, remarked that the petals of the first were tinged with red, while those of the latter were pure white.

Best Six Ornamental Foliaged Plants for Garden Decoration.

At the same meeting this question was discussed, and ended in this summary, as recommended by W. C. Barry:

Alternanthera amabilis; *Centaurea gymnocarpa*; *Abutilon Thompsonii*; *Iresini Lindeni*; *Coleus*, varieties; *Abutilon vexillarium pictum*.

Best Large Foliaged Plants for Subtropical Gardening.

P. Barry recommended, at the same meeting, *Canna*, *Colocasia*, both large-leaved and beautiful, very easily managed; can be taken up and wintered in the cellar.

Ornamental Trees and Plants.

At the same meeting, T. C. Maxwell, of Geneva, spoke in behalf of the pictur-esquefulness and desirability of many of the new ornamental trees and shrubs. *Abies excelsa pendula* was described as a great acquisition. A Golden Juniper was a great curiosity. And among the dwarf evergreens, the *Abies excelsa pigma* was remarkable, growing only one foot high.

New Garden Flowers.

Quite a number of new garden flowers will be introduced this spring to public notice, by the various dealers. Although many novelties are brought forward, which they or we have never seen (because the descriptions are copied from foreign catalogues), yet there are a few perfect gems really worthy of encouragement. We name the most desirable:

Celosia Huttoni.—A beautiful plant introduced by the Messrs. Veitch, of Chelsea, England. It is described as being of compact, pyramidal form, one and a half to two feet high, bushy habit, about one and a half feet in diameter. Profusely branched, each leading branch being tipped with a small spike of bright crimson flowers. In color the plant resembles the well-known *Iresine Lindenii*, the upper surface of the leaf being of a deep claret color, while the underside is of a bright crimson shade. As a bedding or greenhouse plant it will take a high rank, from its fine habit and rich coloring.

Primula Japonica.—The most remarkable of this family, and styled in England, the *Queen of the Primroses*. It was introduced by Mr. Fortune from Japan, and during the past two or three years has achieved an immense notoriety in England. The leaves resemble those of the English Primrose, but are about three times the size; the flowers are produced on a tall scape in whorls, the color being a rich rosy purple with a dark eye; the seed requires a long time to germinate. The London *Floral Magazine*, in a notice of it, says: "Since the day when *Lilium auratum* was displayed for the first time to the horticultural public, we cannot recollect so great a sensation to have been occasioned by any plant as by this."

Amorphophallus Rivieri.—A most curious addition to our "Ornamental Foliaged Plants." Was introduced from China by Mr. Riviere, the head gardener of the Luxembourg garden in Paris. The plant has several peculiar characteristics of growth. From the tuber shoots up a thick stem, two to four feet in height, which throws out a single extraordinary palmate leaf from two to three feet in diameter; this is divided into three principal lobes or divisions, each of which is cut and subdivided. The leaf stalk is very robust, dark green, and spotted with purple, and bears at its summit the blade, which is of a fine deep green, and so singular in its appearance that most persons take it for a cluster of leaves rather than a single one. Planted by itself upon the lawn, the plant is sure to attract attention, if from no other merit than its very oddity of habit. The plant has a flower similar to that of the Arum, and its odor is decidedly disagreeable; it should be cut away before it develops. Among plants for the garden or lawn ornament, it will be found a fitting companion to the *Caladium esculentum*. The plant thrives in any good garden soil, and is even suitable for the parlor and conservatory.

Campanula medium, Calycanthema alba.—A splendid new and showy variety of *Canterbury Bells*. The calyx forms an elegant cup round the base of the bell, being of the same beautiful color as the Corolla.

Mimie, new winter-flowering Carnation.—Habit neat and compact, attaining only from twelve to fifteen inches in height when in bloom. Flowers of purest white, and borne in great profusion.

"*Marie Louise*," new sweet-scented Violet.—The best and most valuable thing in new violets we have yet had. In color it is much darker than the well-known Neapolitan violet, double its size, equally fragrant, and in its prolific flowering it is believed capable of surpassing the old favorite "Neapolitan." Much admired among bouquet makers.

New Rose, Hybrid Bourbon—"Peerless."—Flowers described as being borne in immense clusters of rich crimson; double, fine form, very fragrant, hardy.

Small Fruits for the Family Garden.

Read, by Louis Ritz, before the Eastern Ohio Horticultural Society.

Strawberries.

WITH particular reference to strawberries, I would advise to make a first experiment on a small scale, as a thousand plants, carefully managed, will yield as much as an acre neglected. Plant on the hill, or on the matted row system, as they will yield best in the long-run; either mulch your ground heavy enough to keep the weeds down and the soil mellow, or use the cultivator, harrow, roller and hoe, frequently, and be careful to do this always when weeds are small, and give a light winter covering to protect the hearts from the extreme frosts and to keep the berries clean when they mature. Handle them carefully at picking time, and last but not least be sure to find the best market and the right customer. It is a very great mistake to suppose the largest market the best; large markets are always overstocked in the height of the picking season, at which time none, except the very best of berries, will pay; but there are plenty of smaller markets all around you, as well as in the adjoining States there are hundreds of towns and villages, where no, or only a few, berries are raised, and in those your fruit will command a ready price; do not ship to a small market more than it can consume. If five bushels are daily required do not send ten, as the net returns for the ten would not leave any margin on the five; but ship your surplus to some other market; and, above all, send only the very best of fruit; have your name attached to it, and your berries will gain after a while such a reputation that you can safely defy all competition.

Varieties.

What varieties to plant, will depend on your soil and your market; for distant shipment the list is very limited, while for home markets there are many sorts that will, with fair treatment, make ample returns. It is best not to rely on any one kind, however good it may be, as one is not always able to command a sufficient number of pickers, or your markets may be glutted just at the time the bulk of your crop comes in.

For distant shipment, we have for earliest the *Princess of Wales*, which ripens a few days after the Downer's Prolific; it is firm, large, showy and of excellent flavor; though of foreign origin, it grows on the hill system, in a well enriched, heavy clay soil, strong and vigorous, is quite productive and commands a very high price in market, as it has to compete only with soft berries. But I would not advise its planting, except where good culture is given; and I may mention here, that foreign varieties will do better, if annually renewed, a plan that is generally adopted on the continent, and I incline to think that our native sorts would likewise yield better returns, if this plan was adopted.

Next we have the *Wilson Albany* and *Seth Boyden*, maturing about medium season, both very productive on the matted row plan; the former yielding a larger amount of fruit; the latter, however, commanding a much higher price in market. The Seth Boyden is not reliable in light and sandy soil. Mr. Wm. Parry informs me that in 1871 the Seth Boyden surpassed any strawberry crop he ever raised, very perfect, large and productive; but this year he had ten acres of light, sandy soil in

strawberries, all of which looked well until the fruit began to form, when the severe drouth set in and the Seth Boyden suffered most, the Chas. Downing least, while Wilson and Kentucky were only moderate crops. The Seth Boyden in my grounds has always given satisfaction, neither suffering from extreme heat or cold. Mr. Sam. Miller, of Missouri, and others attest to the same fact, and say it is with them all that is desirable in a strawberry.

For late market there is the *Jucunda*, wherever it does well, as in Belmont county and some other localities in this State, and the *Triomphe de Gand*, both requiring hill culture; the latter in compact, rich soil, well mulched, being one of the best paying varieties.

For home markets there are, besides, the Nicaise, which grown broadcast is of no account, but cultivated in hills yields a very early and large crop. I picked one season, from 500 stools, 830 quarts; berries are rather above medium size and of a peculiar, to most palates, very pleasant flavor.

Burr's New Pine, a great bearer in matted rows, annually renewed; its fine light color and excellent flavor, make it a favorite everywhere, and it will bring in Cincinnati twice as much as the Wilson, if the berries have been properly handled.

Chas. Downing, another large, bright red and regular shaped berry, having made many friends during the last two years, will only do well in stools, but yields then heavily; rich sandy loam is its favorite soil, and Mr. Parry considers it his second best berry.

Lady of the Lake, an old favorite of mine, and worthy of more attention than it has thus far received, as it seems to stand neglect even better than the Wilson. Mr. Scott, of Massachusetts, for the last thirty years the most extensive strawberry grower in the New England States, has informed me that the Lady of the Lake yields with him, forty to fifty bushels more per acre than the Wilson, or about 200 bushels actual count, which averaged him \$9.50 in Boston market.

Fillmore, which Mr. Knox used to style his second best berry, has to be kept in stools, and gives in strong, rich loam, an abundant crop of large berries.

Agriculturist does not succeed everywhere, but should be grown where it does.

Green Prolific, yielding in hills a very large crop; it has averaged with me, some seasons, two quarts to the stool, and is, on account of its color, very saleable in market.

The *Green Prolific*; the only variety which will live and give satisfaction in the warm, sandy soil of our Miami Bottoms, where neither the Wilson nor any other sort ever outlived a single season; it will no doubt do as well in other similar localities.

Kentucky, which in matted rows, hill or broadcast, seems to do equally well; and in appearance, size and flavor, a most excellent berry. I picked this season from a bed of 1,200 feet—plants covering the bed—which had not been worked or manured for three years, over four bushels of the largest berries.

These varieties are named in the order of their maturity, commencing with the earliest; some of them will, of course, do better in one locality than another, and every grower has to find out by experiments on a small scale, which are the best for his own region or soil, taking always in consideration that the largest berries, of a

bright red color, sell best. Whoever has the great desideratum of the strawberry vine, a well drained, rich, deep, and above all, a moist soil, can grow any variety to perfection, and with him the small, wild berry of the fields would almost rival the Seth Boyden or Dr. Warder.

Most of the varieties named will do equally well for the home garden. Lovers of fine fruit, however, should not do without the *Lennig's White* or the *President Wilder*; and for the epicure, who does not mind time, labor or cost, there are numerous other sorts, combining the highest standard of excellency, size and flavor, that satisfy the most fastidious palate.

But my list of varieties would be incomplete without mentioning the *Ida* and the *General Meade*, and more particularly so, the first. Mother earth seems to grow them spontaneously for those of her favorites who like to reap without sowing. Let those who are afflicted with this failing, try the *Ida*. Plant it close enough for the runners to cover the ground the first season, and they will afterwards take care of the weeds themselves.

New Varieties.

And now a few words about new seedling varieties, some of which promise a bright future:

1. The *Col. Cheeney* I saw, for the first time, in fruit last summer, at Barnesville, in what I consider one of the regions best adapted to small fruit culture in our State, of which fact our Belmont county friends, I am happy to add, seem to be fully aware; the berries on exhibition were extremely large, of fine showy appearance, fair taste, but rather soft. In productiveness, the *Col. Cheeney* appears to rival the far-famed *Mr. Nicaise*, as the berries were few and far between; it certainly took a great many plants to fill a few quarts. I suppose the plant to be pistillate, as by far the larger number of berries were small and knotty and of no earthly account.

2. *Black Defiance*, raised by Mr. Durand from the *Green Prolific* and *Triomphe*. It is a strong, healthy grower, and seems to have many good qualities; but with me the fruit stems are so short that the berries cannot be kept clean; this, however, may be a defect in the soil, as it is highly spoken of in the Eastern States.

3. *Monarch of the West*; plant very strong and healthy, fruit large and handsome. I learn from Mr. William Parry that it is the largest and finest strawberry he has; foliage remarkably strong and vigorous, standing the past hot and dry summer without injury, when the *Wilson* and other sorts were nearly ruined. The fruit is firm, delicious and handsome, selling at \$1 per quart in Philadelphia, when the *Wilson* is selling at 25 cents.

4. *Matilda*; a seedling from *Triomphe de Gand*, a large, handsome, strawberry, firm and quite productive.

Mr. G. S. Tulles recommended it as a market berry, though deficient in flavor, while Mr. Charles Downing, who has repeatedly visited the original plantation, speaks very highly of it; and says that the *Matilda* (according to his taste) will class very good or best: the berries sell about one-third higher than *Wilson's*, while there is only a little difference in the yield.

5. And last, but not least, the *Dr. Warder*; if this berry will show during the next six years as bright a record as it has through the past (and I have no doubt it

will), then it cannot fail to occupy as prominent a position among strawberries as its godfather, our noble president, so deservedly occupies amongst horticulturists. In another year we will hear more from it, as it is being largely planted in New Jersey, Missouri, Kentucky and other States for market purposes.

The actual yield with me of 200 feet on the matted row plan, without winter covering as manure, was two bushels and twelve quarts of such berries as I exhibited here in Zanesville, and other localities, without counting what was taken off by visitors.

To show the relative value of strawberries in market, I may mention that the following varieties ranged, on the same day, in Cincinnati, at

Fifty cents for Jucunda.

Forty cents for Triomphe de Gand and Seth Boyden.

Thirty to thirty-five cents for Kentucky and Agriculturist.

Twenty cents for Chas. Downing.

Ten to fifteen cents for Wilson's Albany.

Raspberries.

Towards the end of the strawberry season raspberries commence to ripen, and if the most hardy and productive kinds are selected, an abundance of delicious fruit will be on hand. Growers seem to think the Black-cap more profitable than either the Purple or Antwerp family; with little or no attention, this may be true, but when the latter are raised in hills, the number of canes limited to three or four, the soil kept well worked, or better still, mulched, the suckers hoed off, the yield of both is about the same, and the difference in price about double. Mr. Wm. Parry, of New Jersey, gives the average yield of all the different kinds of raspberries he has cultivated for the last ten years, at 2,000 quarts per acre, and the average price at twenty-three cents per quart; this shows that red berries largely predominate, as ten cents would have been nearer the mark for black raspberries.

Black-caps should be planted three or four feet by seven, the Philadelphia about the same, but Antwerps will do better five by five feet, so as to use the cultivator both ways, which will keep the suckers down.

[TO BE CONTINUED.]



A New Seedling Potato.

IN the fall of 1871, I received from E. S. Brownell, of Essex Junction, Vermont, seedling potatoes of three different kinds, one of which I have tested under very unfavorable circumstances, and find it so good that I can but hope it may be further tried the coming season, and then offered to the public, should it prove worthy. The name he has given it, is, "Beauty of Vermont." He writes me it was from seed of the Early Rose, in 1870. I would describe the potato as of medium to large in size; color of skin very much like its parent, the Early Rose; flesh a light straw color; eyes small and few; shape oval flattened, and roundish, varying somewhat like the Early Rose; stem set in shallow cavity; smooth and fair. Quality: cooks mealy, evenly through, without hard or watery core, and as good, if not a little better, than the best for the table; no unpleasant flavor is left in the mouth when eaten, but a desire for more; one of the most productive varieties, healthy and strong, ripening about a week later than the Early Rose. On the whole, a most promising variety.

Westborough, Mass.

W. H. WHITE.

Flowers for Ornament and Decoration.

BY ANNE G. HALE.

[CONTINUED.]

A FINE figure for a niche, or a corner bracket, is a large vase filled with a tall bouquet. Flower-stalks of gladioli are especially effective here; also branches of lilies, or individual lilies of the larger sorts, together with panicles or spikes of medium or more minute inflorescence; such as canna, spirea, deutzia, delphinium, are always desirable, while boughs of pendant blossoms—laburnum, acacia, dielytra, salvia, etc., and all papilionaceous flowers, whether drooping or erect, add much grace to such collections. In filling the vase, it is well to select one elegant blossom or cluster for the center, the remainder of the group diminishing gradually in size, the stems also of slightly lessening length, so that the bouquet shall present a pyramidal form. Fronds of the larger ferns, branches of slender lanceolate leaves, and long ribbons of grass, particularly of the variegated sorts, with their plumy blossoms, are the proper foliage. Long cuttings of convolvulus, tropeolum, and other blooming vines (only one or two handsome branches, and those of the same plant), should fall from among the group, over the edge of the vase, and wind carelessly around it, and about its support, thus giving an air of lightness and ease to what would otherwise appear stiff and formal. Stateliness is the idea to be conveyed by this grouping, hence the vase must not be crowded. Only a few stalks, and not more than two or three of a species, are required, while one splendid lily, peony, or cluster of roses, is sufficient for the center. A floral ornament of this sort is appropriate for the communion table. The floral festooning, mentioned above, is suitable wreathing for any part of a church, or its furniture.

Floral wreaths, crosses, crowns, stars, are more satisfactory, if the verdure is first arranged, as directed, for the festooning, and the flowers afterward inserted. Perforated, or wire-netting, forms of almost any desirable shape, may be procured at the florists; of these, a beautiful wreath, cross, etc., is quickly and easily prepared, the forms being filled with damp moss, in and among which the stems of foliage and flowers are inserted through the apertures. At the tin stores may be found slender tin pans, or troughs, of these shapes, painted green or brown; they are intended for holding water, in which the stems of flowers may be placed, and thus these floral devices retain their beauty a long time. They are generally used for the decoration of graves, but are not out of place upon the parlor table or the invalid's book-stand. For all these designs, buds and half-blown flowers, of medium size, with a good variety of the smaller sorts, of individual growth as well as of bracts, are needed; and a large proportion of heavy greenery for the ground, with a little delicate and lighter foliage for separating and relieving the flowers.

The usual table embellishments, of the floral order, are generally wreaths surrounding certain dishes, tall vases, or the high epergne with its broad bowl or vase-like branches: these may be occupied by flowers, shedding fragrance and beauty over the feast; but they are frequently so densely grouped, and require so much space, as to interfere seriously with the sociability of the company; low, shallow dishes, filled with short-stemmed blossoms, if they do not present so imposing an appearance, are far pre-

ferable; and these blossoms may be more readily examined and admired than if raised to the height of the tallest person's eyes. The most suitable table flowers, are roses—always, if possible—(for their significance), camellias, carnations, tuberoses, fuchsias, azaleas; or balsams (double), portulaceas (double), gilliflowers, the smaller lilies—lilies of the valley, especially—and hyacinths, in their season; with heliotrope, mahernia, genista, acacia, sweet alyssum and mignonette; all feathery foliage, of the gentlest green, fringing the dish (a pendant spray or blossom breaking the outline here and there) and slightly pointing the collection at intervals. These dishes of flowers are equally suitable for the festive board or the center or pier-table.

Mantel bouquets, because of their awkward receptacles, are too often clumsy, uninteresting concerns. Vases of medium height and size are best for these, of colorless glass or crystal. Decorated or gilded vases, whether of china or glass, are entirely unfit for holding flowers. Their dainty colorings or etchings or picturesque forms may command admiration, and serve effectively as ornaments to any apartment, if allowed to remain idle; but, no matter how beautiful they may be in their particular province of art, when placed in close companionship with Flora's exquisite tints and tissues, not only do they suffer in comparison, but even the flowers themselves refuse to disclose their highest charms in such society. To prove this, just place two bouquets, of precisely similar flowers, one in a common glass tumbler, the other in an elegant Bohemian or Sevres vase, and see how much more vivid and healthful in coloring, and vigorous and intelligent in manner, so to speak, the group in the tumbler will appear, than their dull and dingy and characterless neighbors of the ruby or gilded vase. Silver, it is true, forms an agreeable contrast with delicate green, and the more subdued tintings, and hence vases and dishes of this material will always be in request for table flowers. And for a statuesque group of camellias, tuberoses and cape jasmines—gleaming like sculptured marble amid their own dark foliage—the grandeur of some dim old bronze seems most appropriate, and the solitude of some shadowy recess more fit location than the broad display of the mantel.

The vase for holding a mantel bouquet should be of slightly spreading form; and as only the front of the flowers is seen, they must be arranged in the fan-shape, rising gently in the center. A back of arbor vitæ, or of bouquet green, is very suitable, but more delicate foliage is always desirable when it can be procured. Heath, acacia, or the flumey boughs of asparagus, are very beautiful. Arrange this first, then a row of sprays and spikes of the smallest flowerets in contrasting colors; next, small clusters of larger flowers, with their buds, in harmonizing tints; each cluster separated from its companions by a bit of green, or a spikelet of white; then large and small, alternately (the largest in the center), of harmonizing tints, a speck of green here and there—if part of it is drooping, so much the prettier. Clusters of medium-sized flowers should follow these—a few pendant bells or racemes among them; and then flowers of a similar size, alternating with the smallest of drooping habit, a few leaves of finely cut foliage interspersed and hanging over the edge of the vase, with a stray branchlet or raceme, of fine floreescence, of greater length, to relieve the monotony of the edging. Of course the stalks must be of graduated length, that each set of flowers and foliage, as it is added, may stand freely below the preceding set.

[TO BE CONTINUED.]

Notes from my Garden.

BY PORTE CRAYON.

IN establishing a garden, six years ago, I proposed to make it supply my table with fresh vegetables and fruit all the year round.

With vegetables, the result was obtained the first season, and the supply has been ample and continuous to date, the carrots, parsnips, salsify, beets, turnips, cabbage and potatoes of one season always overlapping the spring greens, lettuce, radishes, spinach and asparagus of the succeeding year.

By the third season, the small fruits and peaches were all established and in full bearing, and from the first of June to October the supply of strawberries, currants, raspberries, gooseberries, blackberries, peaches and grapes was continuous and abundant. My experiences in this department have been given in former letters, and I have nothing new to add, except the fact that the strawberry beds, which I have cultivated in matted rows, and mowed every season after fruiting, have given me less trouble and more fruit than any other.

Besides the usual varieties of vegetables and small fruits, my garden is stocked with all the tree fruits suitable to our climate—apples, cherries, peaches, pears, plums and quinces—sixty-five trees in all, including the best varieties to be found in the catalogues.

My apple list comprises the Early Harvest, Red Astrachan, Maiden's Blush, Smoke House, King of Tompkins County, and English Golden Pippin, and two dwarf Vandeveres, young trees in thrifty bearing. The Fenton, Hungo, Roxbury Russet, Newtown Pippin, Beauty of Kent and Northern Spy, young trees which have not fruited, with two Rambos and two Winter Sweet Paradise, old trees, which I found in the grounds, worm-eaten and neglected; by cultivation and attention they have yielded me satisfactory and increasing crops every year since I came in possession.

The Rambo is our standard dessert apple from October until January; and the Sweet Paradise, until March and April. This latter fruit, imperfectly described by Downing, is one of our favorite winter apples here, being of handsome appearance, above medium size, with a rich blushing cheek toward the south; in texture peculiarly tender, fine grained and light, very sweet, crisp and juicy in November, and attaining in time a delicate aromatic flavor, like that of a ripe Banana.

I also found on my grounds an old quince bush, forlorn and neglected, which bore two quinces the first season. By cultivating it with manure and a quart of rock salt every season it has brought me annually increasing crops, and this year yielded one hundred and ten sound quinces.

Of cherries, I have five handsome and thrifty trees, comprising three varieties, the May Duke, Early Richmond and Yellow Spanish, which have been in bearing three seasons. Up to date I have been unable to secure a single ripe specimen to test their flavor, on account of the birds, who eat them all as soon as they begin to turn red. As we have abundance of other fruit in cherry season, I legitimize the robbery and accept the return in cheerful music.

My list of peaches included the Early Hale, Crawford's Early, Stump the World,

Susquehanna, Yellow Heath Cling and Crawford's Late. They were set out in the spring of 1867, cultivated with low heads, and by the shortening-in method, recommended by Downing. They commenced bearing the third season after planting, and have yielded four successive crops of the largest and finest flavored fruit of their respective varieties. Meanwhile the trees have died from time to time, so that not more than one-third the original plantation remains, and from certain signs, these will probably not last over next summer.

In filling vacancies caused by death, and increasing my orchard, I have added Troth's Early, Early York, George 4th, Eliza, Harker's Seedling, White Heath, and Old Mixon Clings, and the Blood Peach.

The Blood Peach, which Downing says is only fit for pickling, we find very agreeable eating in Virginia. Forty years ago I knew it as the "Black Georgia," and six years ago enjoyed some very fine specimens, at Richmond, Virginia, so I conclude it requires a southern sun to temper its abundant and refreshing juices.

The Early Hale has been a decided success with me, showing no more disposition to rot than some other varieties. In the season of 1871, I lost nearly the whole crop by the rot. The Early Crawfords suffered equally, and Crawford's Late very considerably. The same season, my plums were annihilated, while apples and grapes both suffered by rot. The last season, all my fruit was remarkably sound, and of three bearing trees of Early Hale, I did not lose a single peach by the rot.

I have fought the Borer with ashes, lime, tarred paper, hot water, knife and wire, yet on examining the stumps of the dying or dead trees, I find from a dozen to twenty worms in each, often in the roots a foot below the surface.

Although I am of opinion, generally, that we cannot rely on the improved peach for more than four or five consecutive crops, I don't doubt that worms were the immediate cause of the death of my trees.

Of plums, I have the Jefferson and Duane's Purple, lately planted; seedlings of the common Damson and Early Harvest, in bearing; and three varieties, sent by a nurseryman, under false names—one is a Green Gage of fair quality, but rather insignificant in size, good for preserving, and hangs a month on the tree after ripening; the second is a larger and higher flavored fruit, oblong, light green, with a white bloom and faint blush; the third is a superb plum, six or seven inches in circumference, and of most delicious flavor, externally bearing a close resemblance to Coe's Golden Drop, but a clean free stone, ripening about the first of September.

I have combated the Curculio by jarring over a sheet for two seasons, catching a dozen or more insects at each operation. The first season I saved no fruit at all; last season I realized full and satisfactory crops, although nearly all had been punctured by the Curculio. The first outgrew the wounds and ripened healthy, and without worms, showing only a thin scar on the skin. This leaves me in doubt whether the jarring had anything to do with the success of my crops this year; under the Green Gage tree I tied a hen, with a brood of young chickens, about the middle of May; from this tree I caught no Curculios, and not a single plum was punctured. I have faith in this trap, and will extend the experiment next year.

My Dwarf Pears, Duchesse d'Angouleme, Belle Lucrative and Vicar of Winkfield have been fruiting for several years, three or four specimens each. This

season they gave me half a bushel each of the finest fruit. I have the Bartlett, Tyson, Flemish Beauty, and Seckel, and Vicar, as standards, all of which fruited handsomely this season. The Flemish Beauty yielded between one and two bushels of the finest pears, some specimens ten and a half inches in circumference around the swell. They ripened on shelves in a dark room, beautiful as wax-work, of superior flavor, and no rotting at the core. I had Vicars of fine size and good flavor at my Christmas dinner. For winter stock, I have set out Winter Nelis and Buerre d'Aremburg. This fall my two Dwarf Vicars perished miserably with the sap blight, all the other trees seem remarkably healthy.

I have a variety of grapes coming on, but as yet the Concord is my main reliance; for two seasons I have lost about half my crop by the honey bees, and next year propose to treat them with bottles of switchel, which will deplete my neighbors' hives, and possibly save my fruit.

With six years of experience and observation, I have reached the general conclusion, that an amateur horticulturist, advanced in years, should eschew experiments and seedlings, and stock his garden with the best authenticated and finest improved fruits to be found in the nurseries, and then the price of good fruit (as of Liberty) is "eternal vigilance."

West Virginia, January, 1873.

The Catalpa.

IT has always been a wonder to me, in reading lists of trees given for ornamental, for street, for timber, and western prairie planting, that the Catalpa is so seldom mentioned and planted—it certainly only needs to be seen and known to be appreciated. Mr. Foster, in November number of *HORTICULTURIST*, speaks of two kinds, one as tender, and the other as hardy. I was not aware that there was more than one kind; the one we have is perfectly hardy here, at Cincinnati; ours has very large leaves, the largest of any hardy tree we have; the flowers are numerous, even on very small trees, quite fragrant, last some time, makes a dense shade tree, very free from insects, so far as I have observed; and above all, for value in western tree-planting, it is, to the best of my knowledge, a most durable wood for posts, etc., standing in the same list with Mulberry, Locust and Cedar; and for rapidity of growth, there are very few kinds that will equal it. I have one standing on my place that has been planted about fifty years, it will measure fifty feet in height and eighteen inches in diameter at the butt; single trees are apt to grow very spreading, but in close planting, for timber, they will grow straight and tall.

Where is the native place of this tree? I was under the impression that it was a native of Iowa and Illinois, from what an uncle of mine, who moved from this place to Davenport, Iowa, many years ago, told me; he said that there they grew large and plenty enough for making railroad ties, and were used for that purpose; was he mistaken in the tree? I am very sure he was speaking of the Catalpa at the time. In conclusion, will say that it never sprouts, but will spread to some extent from the seeds.

C. J. J.

Cincinnati.

A New Remedy for the Canker Worm.

BY C. M. HOOKER.

THE Canker worm, which has for so many years been the worst enemy of the apple grower, in the New England states, has for a number of years been quite troublesome in many parts of Western New York, and also in some of the Western states.

The habits and appearance of this caterpillar have been too often described to make it necessary to enter into a description of them here. But perhaps it will be well to say, for the information of those that are in doubt as to the worm I refer to, that it is the caterpillar that feeds principally upon the leaves of the apple tree, leaving the stem and frame-work of the leaf, and which, turning brown, gives the orchards, about mid-summer, the appearance of having been burned or scorched with fire. In a few weeks new leaves are put forth, and the tree partially recovers, but bears no fruit; and where orchards are neglected, this process goes on from year to year, until the trees are so enfeebled as to be worthless. Sometimes the Canker worm will leave an orchard entirely, without any apparent cause, but such is very seldom the case, though they are much more abundant some years than others.

Having a young apple orchard, in one corner of which a few Canker worms have begun their work, I have naturally been quite interested to know how to get rid of the pests. Troughs filled with oil are expensive and troublesome. Collars of zinc or tin are not a perfect protection, and cost a good deal. Painting with printer's ink, on strips of paper, fastened around the tree, is perhaps the best protection we have; but that is a great deal of work, and is very apt to be neglected or half done, in which case a partial crop, at least, of worms is the result. I have been trying to get something that will destroy the worms on the trees, and which can be applied without too much trouble or expense, and hope that I have hit upon something that will be found useful for that purpose. I refer to Paris Green, the article that is used so extensively to destroy the potato bug. Last year I mixed some of it with eight times its bulk of air-slacked lime, tied it in a thin muslin bag to the end of a long pole, and in the morning, while the dew was on the leaves, gave a tree, on which the Canker worms were at work, a good dusting with the compound; the result was that, the next day, scarcely a live worm could be found; all that had reached the leaves, on which the mixture had fallen, were dead. I found many of them still hanging to the tree, though life was extinct; the tree was a small one, eight or ten years old, and it was late in the season when I made the application. The worms were every one gone in a few days, as would have been the case in any event. I regretted very much that I had not begun at them earlier, and I propose to do so this year; but one thing is certain, Paris Green will kill them, and they will eat it, if it is on the leaves upon which they are feeding. There are objections to this, as to all remedies, but still, I hope it may be found of some practical value—further trial is needed to settle that question. Paris Green is a very deadly poison, being a preparation from arsenic; great care must be taken to keep it where nothing will be injured by it; and in mixing and using it, care must be taken not to get any of it into the lungs, as it can enter the system in that way, as is very well known to painters. Of course it would not do to let hogs or cattle run in orchards where this was in use.

On young trees, it can be applied from the ground; on large ones, it would be

necessary to use ladders; in either case the person, using it, should be careful to keep to the windward of the bag.

I used air-slacked lime to mix with the Paris Green, but think flour would be preferable, as it would adhere to the leaves better. Lime, plaster, ashes and flour have all been used to mix with it in fighting the potato-bug.

My experience with this remedy is so very slight, that I do not wish to speak too confidently of it, but merely to give it for what it is worth, and to call the attention of others who are troubled with Canker worms in their orchards, to this article, hoping that it may be tried, to some extent, the coming summer. The cost would be but trifling, compared with the results, if effectual. If there are any others who have tried Paris Green, for the destruction of the Canker worm, I hope they will give the public the benefit of their experience.

Rochester, N. Y.

Keeping Winter Fruit Out-doors.

BY M. B. BATEHAM.

LAST week we had two days' respite from severe cold, and the snow being gone from my orchard, I picked up a basketful of nice Baldwin apples from under a tree, where they fell last November, and had lain, for two months or over, most of the time hard frozen, and covered with six or eight inches of snow; but they were now quite sound and crisp—more so, indeed, than those of the same kind kept in my cellar.

Several other varieties were found in the same condition, but only such as were hard and sound when the winter set in—all that were then at all mellow having been destroyed by the freezing and thawing. I also found, at the same time, several winter pears that had fallen among leaves, under the trees, and had kept perfectly fresh and plump—in better condition for house-ripening than any that were in my cellar.

Many such facts will no doubt be observed the present winter, as a large amount of fruit was left ungathered last autumn; and all experienced orchardists, in northern climates, must have observed the like. My object is to suggest the inquiry whether these hints, given us by Nature, may not aid us in devising cheaper and better modes of keeping these staple fruits through the winter than any that have been generally practiced. I do not remember having read of any well conducted experiments in keeping apples or pears, in a frozen state, through the winter, except the following, which was communicated to me, last year, by Dr. L. M. Ayers, a very intelligent amateur fruit grower of Urbana, O.

The substance of this was communicated to the *Rural New Yorker* some time last summer:

" My method of keeping winter pears is as follows: I gather the pears as soon as frosts occur—about the first of October, in this latitude, then select a grassy spot, under a tree—evergreen preferred—near the dwelling, and lay the pears on the ground in shallow piles, of about a bushel each, taking care not to have them more than about six inches in depth. I then cover them with leaves of forest trees, four or five inches thick, and throw brush or sticks on top, to hold the leaves in place and keep off animals. When winter fairly sets in, and the pears are frozen, or likely to be, I remove the brush or sticks and cover the piles (over the leaves) with coffee sacks or bits of old carpet, so as the better to exclude air and light, but not designed to protect from frost, as *the more frost the better*. Rain does not hurt the pears, nor several times freezing and thawing, only this will somewhat hasten their ripening. When we want some for use, we bring a basketful into the house, and by keeping them in a warm room, a few days, they ripen nicely. Vicar of Winkfield keeps in this way, all the winter, splendidly; and last year I kept Columbia till middle of January, Jaminette till February, and Beurre Easter till May. In no other way have I been able to keep these so long or so well."

Painesville, O.

THE
WESTERN HORTICULTURIST

MARK MILLER, EDITOR
H.W. TROY-DES.

DES MOINES, IOWA
E. SEARS-SC.

Carnations—What is the Matter, and other Queries.

ED. WESTERN HORTICULTURIST.—I would like to have information on a few subjects which I think would be valuable to a number of your readers, else I would not ask the space in your journal.

First.—It is the general belief in this part of the country, that apple trees must be grown from cions taken from bearing trees in order to have them bear early. That if grafted from young or nursery trees, they will be a long time in coming into bearing. Now I think this all bosh, but want better authority than my own opinion.

Second.—What's the matter with my carnation cuttings, that they won't root? I have very good success with florist and other pinks, pelargonium and other plants, requiring a greenhouse temperature, but have failed to root the carnation satisfactory. I take the cutting soft enough to break if bent, cut it about $1\frac{1}{2}$ inches long, insert it in the sand which generally stands at 60, though sometimes a little higher. I have some in the bench now which have been in nearly two months, and nearly all have grown over an inch, yet there is not more than 10 per cent. of them have rooted. Please have some old florist give us the mode of cultivating the carnation. Thanks for Halliday's piece on the violet, such information is very valuable to me.

Lastly, I wish a thorough description of the mode of propagating the grape under glass. Does it require special houses, or will our common ridge and furrow plan, and hot water pipes be sufficient? Is it green or ripened wood that is used?

By answering the above you will greatly oblige a would be

Topeka, Kansas.

PROPAGATOR.

REMARKS.—Whether an apple tree grown from a cion cut from a bearing tree, will come into bearing at an earlier stage of growth, than from a cion taken off a young nursery tree, we do not pretend to know, though our opinion is the negative. We are inclined to think, however, that for top grafting large trees, cions from bearing trees will fruit the earliest. There appears to be little or no definite information upon this subject, but should our life be spared four or five years longer, we hope to gather more light than we now have upon it, for we have both experiments well under way.

For propagating the grape under glass, it matters little what the style of structure for the purpose may be. We have not the space to spare in this connection for the

necessary details of either structure or propagation to ensure success in the business. We advise you to procure a copy of each of *Woodward's Graperies* and the *Grape Culturist*, both small works, but very complete upon the structure of graperies, propagation and other matters pertaining to grape culture in general.

Not claiming to be much on indoor floriculture at best, and having experienced like difficulty in propagating the Carnation mentioned by our correspondent, we have called in the assistance of our friend, J. Cochrane, of Havana, Ill. (the best authority we know of), in answer. Having an innate love for the beautiful in nature, Mr. Cochrane made the culture of flowers a mere pastime for many years before ever conceiving the idea of making the business a source of income. Mr. Cochrane will soon favor our readers with an article in three parts on the *Mechanical Construction of Plants*, a subject he is eminently qualified to handle. In reply to our correspondent concerning the propagation of the Carnation, Mr. Cochrane writes :

What there is peculiar in the combinations in the elements in which your cuttings are placed that prevents them rooting, it is impossible to say. My own experience is as follows, and though the Carnation does not strike root as quick as some other plants, it does so in less time than others.

The soil of use in which to strike cuttings, is an enriched sandy loam that has had quite an amount of wood ashes added, which I regard as beneficial only after the callous is formed, and then it is a powerful stimulant. Before the roots strike the soil is only a medium to hold moisture. The Carnation wants less heat than a majority of plants, hence I place them in a cool part of the bench and as near the glass as convenient, that the tops may be somewhat cool and held in check while the roots form in the moist earth. In this situation they root in three or four weeks. First pot them in small pots and set in the coldest part of the greenhouse. I use only the strongest shoots for cuttings and nearly all root. Allow no decayed leaves, give plenty of air.

The *Dianthus* family are natives of Europe, and will not prosper well in hot, dry soils. The *D. Caryophyllus* is the parent of the carnation branch of the pink family, which are divided by florists into three classes, viz., *Flakes*, *Bizarres*, and *Picotees*, and these have been again divided and subdivided by florists, *ad libitum*, *ad infinitum*. Some have recommended its propagation by layers; this is not the best way. A beautiful provision of nature is that if a plant is perpetuated by cuttings with difficulty, it can be freely increased some other way, as the *Smilax* from seed, *Bouvardias* from root cuttings, etc.

AN ALMOND ORCHARD.—The editor of the *Pacific Rural Press*, makes mention of a visit to the almond orchard of Mr. L. D. Chillson, near San Francisco. The orchard numbers 400 trees, a large portion of which are coming into bearing. The trees were planted five years ago last February, and in variety embrace the hard-shell, paper-shell and Languedoc. They are from twenty to thirty feet high. Some of the trees fruited the fourth year after planting, and last season about 2,500 pounds of clean fruit was gathered from the orchard and sold at eighteen cents per pound. This shows a fine profit for the investment, with flattering promise of a rapid increase thereof.

Illinois State Horticultural Society.

THE sixteenth annual session of this society was held at Centralia. Dr. Hutton, on behalf of the citizens, gave to the members a cordial welcome to the hospitalities of the city, to which President Starr made a fitting reply. The President's annual address was a business like and well written paper. Though this meeting was not so numerously attended as at Ottawa two years ago, all parts of the State were most ably represented by her best horticultural talent. Thinking, practical men, who have labored long and patiently in the good work were there.

The reports from the *ad-interim* committees, or Vice-Presidents, gave flattering assurance of the onward progress of horticulture in their respective districts. Concerning the fruit crop of 1872, the reports went to show a most prosperous year. The apple crop was very abundant, and the fruit unusually fine—so fine that special mention was made by Flagg and other members, of the great size and superior quality of many varieties. Peaches were never before so abundant, but were everywhere deficient in size and quality, and as a matter of course prices low.

The grape crop was never better, and the universal Concord the leading variety. Pruning and protection of the vine were briefly discussed. The weight of testimony brought out was adverse to much, if any summer pruning, or of laying down and covering in winter. On the preparation of soil, its degree of fertility, and the application of manure or other fertilizers in the culture of the vine to obtain the best results, there was a contrariety of thought among the speakers, that would have puzzled a Solomon to reconeile.

Little was said about either the plum, cherry, strawberry, or raspberry. Mention was made only of the Nelson and Green prolific Strawberries—the former for market all over. The Early Richmond takes the lead among cherries.

What now most agitates the fruit growers of the state, is what to do with, or how to dispose of their crops. What to plant, or how to plant is no longer the question, but rather, how to best utilize the immense and rapidly increasing fruit crops of the state. Some time was taken up in discussing this matter, and in which a lively and general interest was apparent. Dunlap spoke at some length upon the utility of converting the surplus, or unsaleable portion of the apple crop into cider and vinegar. Earle spoke of canning the fruit. Hutton spoke of a method of his own for drying, which he claimed to be a great improvement over the ordinary practice. Huggins had another plan for drying. The advantages claimed for the Alden process of drying was also presented. A bushel of apples yields six pounds of dry fruit at a cost of twelve cents per pound, market price twenty cents. Wier obtained but four and a half pounds of preserved fruit per bushel of fresh apples, and at the market price found it a losing business. He questioned any superiority of the Alden process over that used by him, either in product or quality of work. Post had a fruit dryer, and claimed for it a saving of fifty per cent. in the expense of manufacture (with better work) over the Alden process—he really thought the specimens from his dryer were the finest on exhibition. He showed a model of his apparatus. From all that he could gather concerning those hot air methods for the preservation of fruit, we do not believe they offer a safe investment in view of the present price of fruit dried in the ordinary way. It is claimed for the Alden process, that

the "fruit is equal in all respects to fresh fruit for pies, puddings, and other confections for the table." We know better, and so will any one else after a trial, though we admit its superiority over the common dried. But will the demand sustain the difference in cost of preparation—that's the question?

On root grafting the apple, Phoenix thought $2\frac{1}{2}$ inch cuts of the root best; Nelson concurred; Wier placed no special importance upon a very nice fit of root and cion, so far as concerns the bark, would unite and grow if not joined on either side. Nelson was of the same opinion, though would advise some care in fitting the bark of cion and root. Tying with waxed cotton yarn was conceded the best method of fastening, no waxing of the parts as of old. For waxing the yarn Baldwin used a composition made of three parts rosin, two beeswax, and one of tallow.

Dunlap exhibited a bushel crate of his getting up for shipping apples. It consists of two head boards 12×14 inches, lath $17\frac{1}{2}$ inches in length for sides. In transportation, the crates are packed endwise, and if need be in tiers. Its size and shape admits of packing into an ordinary wagon-bed with the greatest possible economy of space.

The election of officers resulted as follows:

President.—M. L. Dunlap, of Champaign.

Vice-Presidents.—First district, W. T. Nelson, of Will county; Second district, Samuel Edwards, of Bureau; Third district, Dr. A. C. Humphrey, of Knox county; Fourth district, L. L. Francis, of Sangamon county; Fifth district, J. C. Cooper, of Marion county; Sixth district, Isaac Sneiderker, of Jersey county; Seventh district, Parker Earle, of Union county.

Secretary.—O. B. Galusha, of Grundy.

Assistant Secretary.—H. J. Dunlap, of Champaign.

Treasurer.—Jonathan Huggins, of Macoupin county.

Champaign was chosen for the next annual meeting of the Society.

The meeting was interesting and profitable, as the meetings of this Society always are. The ILLINOIS STATE HORTICULTURAL SOCIETY has a mission—a aim—which it never loses sight of, as may be seen from its large and well digested volume of annual transactions. We should say much more of what transpired at this meeting but for the restriction of our limits.

Grapes—Vine and Fruit.

THE *London Gardener* thus dilates upon the usefulness of the grape:—"Men can live and work on grapes and bread. The peasantry of France, Spain and Italy make many a satisfying meal in this way, and of the wholesomeness of the diet there can be no doubt. Medical men constantly recommend the use of grapes for their patients. Scarcely any plant can equal the vine as regards the beauty of its leaves and fruit. As a covering for bare walls and for affording shelter and shade, it is a climber of the first rank. To sit under one's own vine has in all ages been considered the acme of rural happiness, an emblem of peace, a symbol of plenty, and a picture of contentment. That pleasure, though perhaps not in all its fullness, may become the heritage of thousands in these temperate climes."

Grapes for Wine and Raisins.

A CORRESPONDENT of the *Pacific Rural Press*, writing from Napa county, estimates the value of raisins annually imported into the United States greater than the whole grape crop produced in California. Thinks there is no reason why this demand of the country for foreign grown raisins cannot be supplied from the vineyards of that State; that more attention than hitherto should be given to the production of raisin and table grapes. Upon the best varieties of grapes for the purposes of wine, raisins and the table, and the best method for curing the fruit for raisins, the writer remarks :

" I would not advise any one to confine himself to one kind of grape, but a grape which will admirably meet either one or all of these demands would seem to be entitled to the first place, and this I claim for the Muscat of Alexandria. It is one of the best table grapes both in flavor and keeping qualities, and as far as my experience goes, after trying some thirty different kinds, unequaled for raisins. It also commands the highest price for wine. If any one knows a better raisin grape, he will confer a favor on hundreds by publishing the fact in the *Press*. The Flame, Tokay and Black Moroc co will bear transportation better than other grapes. For red wine I prefer the Zinfandel and Rose of Peru. For white wine, German Muscatel, Riesling, Berger and German Chasslas. These grapes in this valley this year brought twenty-five dollars per ton for wine, and but a small part of the demand was supplied. No reflecting man of this day will plant the Mission variety. The net profit of the foreign vines in my own vineyard this year was more than double that from my Mission vines, acre for acre.

" Now a word about making raisins. I will give you my idea, derived from experiments on a small scale, it is true, but I think it equally applicable to a large operation. All raisins that I have seen made by artificial heat have a cooked taste. They can be made in the open air in the early part of the season, but they are exposed to great loss and damage by insects, bees, wasps, birds and squirrels, and liable to be ruined by rain.

" My plan is this : construct a building with a single glass roof sloping to the south, the lower side of the roof reaching nearly to the ground, the ends and sides boarded tight, with double doors at each end of the building, the outside doors of wood, the inside doors of wire cloth. The floor should be of earth, stone or concrete ; this, with a curtain to draw over the glass roof when the sun is too hot makes the whole complete. Opening the outside doors gives the necessary ventilation in the daytime, and closing them at nighttime keeps the room warm all night without artificial heat. The room of course can be made any length or width desired. I have made raisins that have been pronounced equal to any imported ones."



FRUIT IN MICHIGAN.—At a late meeting of the St. Joseph Pomological Society, the following conclusions were arrived at : The fruit crop of 1872 will exceed that of any year. That there are two peaches which cannot be ignored or rejected—the Early Crawford and Early Barnard.

Influence of Soil upon the Character of Wines.

PERHAPS nowhere is the influence of the soil and its ingredients so apparent as in the difference of character of our native wines. It is peculiar that it will assimilate more of the ingredients of the soil, and show its peculiarities in its product—wine—than in almost any other plant; and perhaps no soil contains more free salts than the so-called virgin soil of America. That those salts have a dominating influence upon the character of wine, we hope to show more fully in our article “The Chemistry of Wine.”

We find a striking illustration of this in a comparison, which we lately made, between samples of the wines produced at Herman, Mo., on the southern side of the Missouri river, and some made at Portland, Callaway county, Mo., on the northern side, by Messrs. Kaiser, Ehrich, and A. Eberhard. While the wines of Herman have more of the foxy aroma, and more body, as well as acidity, those from Portland have less of a foxy character as well as acid and body, which, on the whole, may be considered an advantage. The fact is, that the Concord of Portland is a more agreeable and pleasant wine than that of the same variety grown at Herman, which latter will only lose some of its disagreeable qualities by age and rational treatment.

For Norton's Virginia, however—this prince of American red wines, in which the flavor, which we find repugnant in the Concord and call it foxy, has been developed into real aroma—Herman and its vicinity seems to be the most suitable soil.—*Correspondence Colman's Rural World.*

Miller's Daily Bearing Raspberry,

MENTIONED in Western Department of HORTICULTURIST, for January, p. 21, has been repeatedly exhibited at fairs and horticultural meetings in this State, and noticed in our reports during the past three or four years. It originated on the grounds of a Mr. Miller, of Clinton county, O., from seed of the old “Ohio Everbearing,” an autumn or twice-bearing variety of the Black Cap, and was thought to be a decided improvement on that variety. “*Griggs' Daily Bearing*” is the name of another and older seedling of the same parentage, and very closely resembling Miller's. Neither of them has been found of sufficient value to deserve commendation.

Painesville, O.

M. B. BATEHAM.

REMARKS.—What our correspondent says of Miller's Daily, in Ohio may all be true concerning it there, but won't do for Iowa, so far as one year's trial goes with the plant in our grounds. The main crop was quite up to Mammoth Cluster, along side of it, with but little fruit after—so little indeed that we should scarcely class it among the so-called Everbearers. As to its origin, the claim of its being a seedling of the “Ohio Everbearing,” differs from the account we have of it from one who *ought* to know, and from which it may be inferred is a *chance* seedling.

Influence of Trees upon Rainfall.

A CORRESPONDENT of the *Popular Science Monthly*, gives a strong illustration in proof of the influence of trees upon rainfall. A friend of the writer who spent the months of February, March, and April last on the Island of Santa Cruz, West Indies, says:—"When there twenty years ago, the island was a garden of freshness, beauty, and fertility—woods covered the hills, trees were everywhere abundant, and rains were profuse and frequent. The memory of its loveliness called him there at the beginning of the past year, when, to his astonishment, he found about one-third of the island—which is about 25 miles long—an utter desert. The forests and trees generally had been cut away, rainfalls had ceased, and a process of dessication beginning at one end of the land had advanced gradually and irresistibly upon the Island, until for seven miles it is dried and desolate as the sea shore. Houses and beautiful plantations have been abandoned, and the people watch the advance of desolation, unable to arrest it, but knowing almost to a certainty the time when their own habitations, their gardens and fresh fields, will become a part of the waste. The whole island seems doomed to become a desert. The inhabitants believe, and my friend confirms their opinion, that this sad result is due to the destruction of the trees upon the island some years ago."

Influence of Stocks.

A CORRESPONDENT of Colman's *Rural World*, from long experience, feels convinced that fruit grafted on seedling stocks will partake more or less of the nature of such stocks, and in support of this theory, says:—"I once grafted an English wild cherry on a wild cherry stock. When it came into bearing, it bore cherries about two-thirds the size of the English cherry, the color of the fruit red, and the flavor near that of the wild cherry, viz.: bitter. Another time I took cions of an early May cherry, and grafted part of them on Mazzard stocks and part on Morello stocks. When the trees came into bearing, the fruit was so different that each kind might have been called a different variety from the other.

Any fruit grower can convince himself of the truth of this matter if he will take cions from one apple tree and graft them into twenty different young trees in his orchard. When they come into bearing he will probably find that the fruit of any two will not be exactly alike. In my own neighborhood I know many apple trees of our old standard varieties, the fruit of which has become so degenerated, that they can hardly now be identified even by the best judges of fruit."

PROFIT OF CHERRY CULTURE.—A California paper says: Some of the cherry trees of Mr. Bidwell's orchard, in Butte county, yielded \$200 to the tree this season, the fruit selling as high as sixty cents per pound in San Francisco.

Apples for the South.

THE *Rural Alabamian* gives a list of twelve apples for cultivation in the Southern States—prefacing the list by saying, that the list is strictly for market. For family use, many varieties now omitted should have a prominent position, while a few that are included should be left out.

Early Harvest, Red Astrachan, Red June with remark. “For perfect reliability as an early market apple, there is nothing to equal this old Southern variety.” Yellow June, Garretson’s Early, Primate, Bevan’s Favorite, Golden Sweeting, Early Strawberry, Rhode’s Orange, Batchelor, Taunton.

In this connection it may be a matter of interest to the Southern readers of the HORTICULTURIST, to know what varieties stand prominent in Southern Texas. We have just shipped (Jan. 21) per order to Washington county, Texas, 50,000 apple root grafts of the following sorts: Ben Davis, 10,000; Red June, 10,000; Red Astrachan, 10,000; Rawle’s Jannette, 5,000; Dyer, 3,000; White Winter Pearmain, 5,000; Willow Twig, 2,000; Grimes’ Golden, 5,000.



The Illinois Pippin.

ED. WESTERN HORTICULTURIST.—The attention of the Warsaw Horticultural Society has been called to the fact, that there is already an Illinois Pippin, and the propriety of giving the Seedling apple so named some other name, to prevent confusion. At the meeting of our Society this day, the subject was called up, and a motion to reconsider the naming of the apple referred to having prevailed, it was unanimously decided to call it *Wythe*, in honor of its birthplace. I regret exceedingly that this blunder was made, but it may be possible that there may yet be time to make the correction so it may appear correctly in the HORTICULTURIST.

A. C. HAMMOND.

Warsaw, Ill., January 21, 1873.

REMARKS.—We regret that Mr. Hammond’s note did not reach us in season to make the correction before the February number went to press.



THE KING OF STRAWBERRIES.—A strawberry grower, of Worcester, Mass., compares the Wilson strawberry to the Bartlett among pears and the Concord among grapes, Nicanor too soft, *Downer’s Prolific* for a near market, *Charles Downing*, the *Kentucky* valuable for its lateness, and *Jucunda*, for its fine appearance and excellent marketing qualities. Seth Boyden, Col. Cheney and President Wilder, promise highly.



Floral Notes.

Fumigating Plants.

Tobacco smoke is well-known as a specific remedy for the minute insects infesting roses and other garden plants. Sometimes a keg turned bottom upwards over the plants will suffice to confine the smoke sufficiently, but a better method is to place a newspaper around the plant, with its lower edge snug upon the ground, and its top portion gathered together and tied with a string, the paper thus forming an impervious envelop about the plant. It is a question whether the fumigation of plants may not be applied to those of larger growth and more common or extended cultivation than garden shrubs, but our experiments in this line, made some years ago, while satisfactory in showing that the smoke of cheaper materials than tobacco will suffice to kill the insects, were decided failures in their practical results. The experiments were instituted to determine whether the means indicated could be applied to effect the destruction of the hop aphis, which destroys annually tens of thousands of dollars' worth of that costly crop. On hop leaves thickly infested with the aphis, the smoke of any vegetable refuse was found sufficient to kill the vermin when the leaves were confined, a few at a time, within a closed receptacle. But on surrounding a hill of hops (the vines upon the poles in the usual manner) with a tall shell made of paper pasted on wooden frames, and filling this shell or envelop with smoke from a brazier, no visible effect was produced on the insects. It was found impossible to make the portable envelop perfectly tight, and the admission of air to dilute the smoke was doubtless the cause of the failure, and this difficulty is one apparently impossible to overcome.—*Ex.*

New Plants.

Young's New Golden Chinese Juniper, Juniperus chinensis aurea.

Of this ornamental evergreen, now creating such a stir in England, the *Gardener's Chronicle* says :

“Certainly one of the foremost places amongst golden-leaved Conifers, must be accorded to Mr. Maurice Young's *Juniperus chinensis aurea*. The Chinese Juniper is well known as one of the hardiest and handsomest of Coniferous shrubs; and when we state that the novelty just referred to is the exact counterpart of its parent, in all but its color, and that that color is equal at least in richness of hue to any golden Conifer hitherto known, but little further mention of it is needed. We may however add, from a recent personal inspection of the stock, that it is thoroughly constant. Not a plant amongst the entire stock shows the least tendency to run back; but all, whether infants of six inches or adolescents of three feet high, appear in the same aristocratic ‘cloth of gold’ array. * * * Our notes indicate that the propagated plants take on a close pyramidal habit, and have moreover the two-fold character of foliage which is seen in the parent, and that the color of the more prominent portions of the plants is as bright as the tint of a Golden Holly. Taking

these various points into account, and coupling with them the free-growing, hardy character of the plant, there is no exaggeration in pronouncing this novelty to be one of the best and most desirable of ornamental Conifers."

The *Gardener's Magazine* also says:

"A foremost position must be accorded to Mr. Young's new Golden Chinese Juniper (*Juniperus chinensis aurea*), a beautiful golden sport from the Chinese Juniper, originated at the Milford Nurseries. It retains its bright color throughout the winter as well as summer, and it must become one of the most favorite Conifers ever introduced."

New Dracænas.

Dracæna indivisa and *D. lineata* are both described in the *Journal of Horticulture* as unusually valuable. The former, as a greenhouse plant, has few equals when large, and when young it forms an elegant object, either as a window plant or as an ornament to the drawing-room or hall.

The *D. lineata* is a much more noble plant in habit, foliage broader, more erect, and stiff, while the base of the leaves is a deep reddish brown.

The *D. Veitchii* is probably only a sport of the *D. lineata*. It resembles it very much, but differs principally in having the midrib, in addition to the base of the leaves, stained red. It is an extremely ornamental plant.

New Calycanthus.

A writer in the *Farmer and Gardener* states that he has a white flowering variety of the *Calycanthus floridæ*, or common Sweet-scented Shrub. He says: "I have had these plants under cultivation several years. They are decidedly more vigorous growers than the dark variety. The flowers, which are straw-colored, are also larger and more fragrant, and bloomed through the past dry summer until frost. I do not know that they will produce the same flowers from the seed, but why should they not do so when they have preserved their original characteristics, though surrounded by the dark flowering varieties, ever since they were first known here, more than thirty years ago?" If the above is true, and we have no reason to doubt it, this new variety of an old and very popular shrub will certainly be a valuable acquisition to our gardens.

Dracæna Splendens.

A remarkably distinct, ornamental stove plant, of dwarf and compact, but free growing habit, densely furnished with short oblong, acute recurved leaves, about nine inches long and four inches broad, arranged in a spiral manner, and having winged foot stalks. The color is a deep bronzy green, breaking out in the young growth into bright rosy carmine, the petiole and base of the leaves margined with the same color. The brighter coloring appears sometimes in stripes, and sometimes occupies the whole surface; while the recurved character of the densely-set foliage gives the plant a flat, almost table-like head. Imported from the South Sea Islands.

Lilium Tigrinum Lishmanni.

This is a new lily of the *Tigrinum* group, but differing considerably from others in the spotting of the flowers; the ground color of them is of the usual cinnabar or orange red, the spots being sparse toward the apex of the segments, becoming bolder and closer placed toward the base, but stopping somewhat abruptly, so that the center of the flower is quite free from them. This plant came from Japan in 1871, by P. R. Tufual, of England, from Mr. Lishmann, after whom it was named.

Dianthus Diademetus Plenissimus.

Foreign journals are giving favorable notices to this new garden flower, describing it as an exceedingly beautiful and very useful hardy annual, growing from twelve inches to fifteen inches high, and belonging to the type of the *Dianthus Hedewigii*. "Its usefulness consists in furnishing an abundant supply of very beautiful and

slightly perfumed flowers for cutting during most of the summer and autumn months, even up to the middle or end of October. The blossoms rival in form, and in the beauty and diversity of their marking, the finest of the pinks and picotees of the florist. This result has been secured by pursuing a system of careful selections, that is, by saving seed from only the best marked and perfectly double and well-formed flowers, until the strain is such as to rarely produce a plant bearing single blossoms. Seeds may be sown in the open ground in April and May, or started with hot-bed heat in March, and afterward transplanted. The last mode will produce finest blooms."

New Tea Rose.

It is stated that a new Tea Rose, called *Perle de Lyon*, has been raised in France. This novelty is said to resemble Marshal Neil, but being only more beautiful.

Juniperus Excelsa Stricta.

This new evergreen shrub is recommended by English journals for planting on terraces and in similar situations. Its form is pyramidal and elegant, the color of its leaves silvery; the young plants are very striking.

A Fine White Rose.

"Madam Plantier" is one of the best of the new white roses. It is a profuse bloomer, has fine foliage, and the plant is represented as being as hardy as a common briar.

New Double Fuchsia—Champion of the World.

This is by far the largest fuchsia we possess. The foot stalks are of unusual length and strength, so that the flowers stand out boldly. The tube is short, the sepals are very broad and of great substance, well reflexed and of a most beautiful coral red. The corolla is of immense size, and as it expands forms two-thirds of a perfect ball, its color being of the most intensely bright, though dark purple. The plant is of fine growth, tall, and blooms abundantly, so that for conservatory decoration it is one of the most valuable fuchsias yet sent out.—*Gardener's Chronicle*.

Hardiness of the Primula Japonica.

The *Florist* says there can be no doubt of it, for the plants have stood all winter, fully exposed, in the trying atmosphere of London. The *Floral Magazine* says: "A Primula, a foot and a half high, bearing four or five separate whorls of flowers, each flower an inch in diameter and of a splendid magenta color, and the plant perfectly hardy! Can anything be added to this, to indicate its value?"

Mildew on Roses.

Carbolie soap and water is recommended to destroy mildew on roses, to be applied by sprinkling.

Remedy for Slugs.

A correspondent of the *Gardener's Chronicle* says that he has found gas-tar water, diluted to the color of weak coffee, to be the best preventive to the ravages of slugs on all garden crops, and also an excellent manure, applying it by night from an ordinary watering pot, and half the slugs will be killed, and the rest much weakened. A second dose, after the interval of a week, is generally sufficient to banish them altogether.

Bouvardias as Winter Decorative Plants.

James Taplin, of South Amboy, N. J., writes the *Florist and Pomologist* respecting the decorative value of the Bouvardia. "A few plants of *B. Vreelandii* would scent a large conservatory at night with the most delicate and pleasant of perfumes. We have another sport from *B. Hogarth*, called *The Bride*, which, as regards size, shape of flowers and habit of growth, is the same as *Vreelandii*, but the color is a beautiful satin rose. I can only compare it to the color in Tea Rose, La France. A few plants of *B. jasminoides*, treated as shrubs planted in a greenhouse, will give an abundance of flowers at all times."

Plants for Parlor and Conservatory.

Of the many plants used to beautify the house, few equal the palms. There is a great variety of form, most of them having rather long, pendent, or curved plumose fronds. Many are delicate, and must be kept at an even genial temperature, protected from drafts, to insure any degree of success in their culture; but there are some quite hardy, that will do very well and give an attraction to any group of plants, and in any room kept a little above freezing. Among the most hardy we will name a few: Chamaerops, Fortunei, and tomentosa, very hardy; cabbage palms, chamaedorea elegans, corypha Australis (fan palm), thrinax parviflora, are extremely beautiful; Latania borbonica; livistonia subglobosus is one of the prettiest fan palms we ever saw. All of the above are cheap, and can be had of most large floral establishments.—*Southern Agriculturist.*

**Horticultural Notes.***Mount Vernon Pear.*

The Mount Vernon pear, the *Germantown Telegraph* says, "turns out to come short of the glory claimed for it. In the first place it is said to possess a 'peculiar flavor which may not suit all tastes,' and then it is an early winter, not a late winter sort. Ripens generally in November."

We think very differently from the above. Philadelphia is a very poor locality for first-class pears. We have seen the Mount Vernon growing very vigorously in Delaware and Virginia, and think it entitled to equal meritorious rank with the Beurre d'Anjou and Lawrence. It is a handsome fruit, and flavor is spicier than either of the above.

Profits of Quinces.

An Ohioan, who has three-fourths of an acre of quince orchard, from which last year he sold 300 bushels of first-class fruit, spades the ground in spring, and scatters a peck of coal ashes around each tree, also a quart of salt, and another quart when the quinces are half-grown.

Pear Trees in Grass.

Occasionally, the "grass professors" meet with some examples of encouragement to their theories. Here is one in point: In the last report of the American Pomological Society, an Iowa orchardist communicates the fact that he has been engaged for twenty-five years in growing pears, and has lost in that time by blight fifty times as many as he now has growing. In 1864 he ceased to cultivate his trees, and allowed them grow to grass, which he kept down by cutting every few weeks; and to keep the sod open he spread a barrow-load of manure around each tree in autumn. Since that date, eight years ago, he has not lost a tree.

A Good Wash for Fruit Trees.

C. C. Cooley writes *The Country Gentleman* of what he thinks the best wash for trees to be found in the world. "Take sal soda, which can be had at retail at from three to six cents per pound; place it in a skillet on the fire. It will soon go to what seems to be water, evaporate, and leave a white powder. Keep it on the fire till it becomes a light brown, when it is done. Use a fourth of a pound, or, if the trees are much covered with moss, or are very dirty, use half a pound to the gallon of water. Wash the trunk and large limbs using a sponge or cloth. It can be used at any season of the year. I prefer the winter. This wash will not injure the foliage of the most delicate plant. In a few weeks after using, the trees will look as clean and sleek as though they had been varnished, and the trees will astonish you by their growth and healthy appearance.

"I consider this the best, as well as the cheapest, wash for trees in the world."

The Weeping Willow.

The Weeping Willow has a romantic history. The first scion was sent from Smyrna, in a box of figs, to Alexander Pope. General Clinton brought a shoot, from Pope's tree, to America, in the time of the Revolution, which, passing into the hands of John Parke Custis, was planted on his estate, in Virginia, thus becoming the progenitor of the Weeping Willow in this country.

Ornamental Value of Trees.

At a local meeting, in New England, one speaker said he considered the value of his farm enhanced fully \$1,000 in consequence of the attractiveness given to it by five Elm trees, planted along the roadside, by his grandfather, eighty-five years ago.

Liquid Manure for Strawberries.

An English gardener has been very successful with his strawberry crop for several years on the same bed, and attributes the abundance and size of his fruit to the use of a liquid manure, composed of one pound each of Epsom salts, Glauber's salt, pearl ash and carbonate of soda, and one-half pound of muriate of ammonia to sixty gallons of water. He applies this manure as soon as the plants show signs of growth in spring, watering them pretty freely without a hose, three times, at intervals of about a week, so as to finish before they come into flower; and, if the season be dry, he finds it absolutely necessary to supply them liberally with common water afterward during the whole time of growth, or their increased activity, he thinks, would very quickly kill them.

The Cranberry Crop.

The cash value of the cranberry crop, in the United States, according to statistics, has been estimated as follows:

In 1870 Maine produced 1,000 barrels, Massachusetts 8,000, Connecticut 2,000, New Jersey 50,000. This amount of 61,000 barrels was raised principally from cultivated fields. At nineteen stations on the St. Paul and Milwaukee railroad, 14,385 barrels were freighted during the season of 1869. Only about 3,000 barrels were shipped in 1868. The crop of 1867 was estimated at 62,500 barrels, of which New Jersey produced 35,000, New England 12,000, and the West 15,000 barrels. The average price per barrel, for the season of 1867, was \$16, giving a total of \$1,000,000.

Gigantic Trees

Prof. Gray stated in substance, in a late address, in speaking of the Sequoia of California, that the largest of these trees cannot much overdate the Christian era—that other trees in other parts of the world may be older; that certain Australian trees (*eucalypti*) may be taller—so that they might even cast a flicker of shadow on the summit of the pyramid of Cheops—yet the oldest of these all grew from seed shed long after the names of the pyramid builders were forgotten. We may add that the ages of the largest California trees, which were hollow, were first estimated by counting the remaining rings, to have been growing in the days of the prophet Elijah—but it has since been discovered that the inner portions grew more rapidly than the later and exterior parts, and the estimate supposed erroneously that all were alike. When this error is corrected, the age is found not to exceed about two thousand years.

Country Gentleman.

Rabbits and Young Trees.

An Ohio correspondent of the *Rural New Yorker* gives directions as to keeping rabbits and mice from gnawing young trees. He advises to tie five or six corn-stalks, cut about two and a half feet long, about each tree, setting them close together.

Salt for Pear Trees.

The result of an experiment is thus reported by a horticulturist: "Last spring I put a small shovelful of the refuse material from the salt works, which is composed,

I believe, of salt, lime and ashes, around a four year old pear tree. It has made a very thrifty growth, and the leaves are all free from blight or spot, and have a very glossy, healthy look; while others of the same lot, manured with barnyard manure, have grown but little, and the foliage is spotted and dull. Now, if no ill effect may be attributed to the barnyard manure, it would seem that the difference in these trees was owing to the salt."

Killing Cut Worms.

St. Joseph, Michigan, is again the theatre of another wonderful discovery in the way of destruction to insect enemies. It will be remembered that last year Mr. Ransom discovered the chip trap for catching eurelios. Now Mr. Boynton has discovered a method of trapping cut worms by the thousand. It comes about in this wise: In a field of tomatoes he was much troubled with the worms destroying the plants. Thinking they might be baited, he cut some green clover, wadded it up into small balls and distributed among the hills of tomatoes, and found that the worms would collect about them, eat and go into the ground near them. In this way he took from the locality of these balls the numbers of 37, 68, 70 and 82. He has experimented with various poisons mixed with the clover to destroy them, and at last took boiling water, pouring it over and about these wads, in this way destroying 15,000 in a single day.—*Prairie Farmer.*

A Remarkable Vine.

Mr. L. A. Hardee, of Honey Moon, Florida, tells the following tall story about a vine of his: In June of 1867, I layered a few vines of the Scuppernong in a lot I owned in Jacksonville. In July, of the same year, I sold this lot, reserving these vines. In the fall of 1867, I planted these vines, one of which was near the well; this vine covers a lattice work 54x64, and will bear this season 100 bushels, I think."

**Editorial Notices.***Delays in Correspondence.*

As usual, during the months of January and February, the mails of the respective Publishers are so large, and the rush of subscriptions so great, that it is almost impossible to get prompt answers to letters, or inquiries attended to with celerity. Subscribers must not suppose that, because of these necessary and unavoidable delays, any one is intentionally neglecting them. Nearly every large Publishing house at that time often gets days behind time in the mere entering and posting of their letters.

Death of Luther Tucker.

The sad news respecting the death of Luther Tucker, at Albany, N. Y., recalls

to mind one circumstance which the Press has failed to notice. Besides his connection with the *Genesee Farmer*, *The Cultivator* and *Country Gentleman*, he was the founder and first publisher of *The Horticulturist*. It is true that in familiar history *The Horticulturist* has been frequently referred to as "*Downing's Horticulturist*," and entire credit given him for its origination and possession of the name, and its publication. The facts are otherwise. Mr. Downing was merely the editor. Mr. Tucker, as publisher and proprietor, started it, engaged Mr. Downing as editor, paid him a stated salary to write for it, which continued until 1852, when, immediately following Mr. Down-

ing's death, *The Horticulturist* was disposed of to Mr. James Vick, of Rochester. It is a singular circumstance, that of all the publishers and editors ever connected with its history and management, only its first editor and first publisher have departed, and to think so far apart—twenty-one years. All the others are living, and occupying spheres of usefulness and prominence. Mr. Tucker, then, was an eminent pioneer in horticulture as well as agriculture. He founded what is to-day the most respected and influential of all our weekly Agricultural Journals, and in like manner he was the founder of what is now the oldest in reputation and continued existence of all the Horticultural Journals.

Mr. Tucker was a person of quiet ways, but pleasant disposition, able to agreeably meet, welcome and entertain visitors; good-hearted at home, and with good motives to help the public at large. He was eminently practical. We have never known an editor so capable of eliciting from correspondents matter which contained so much practical experience, and his Journal was a remarkable instance of condensation of the best and soundest thought upon rural subjects. Declining health in late years does not seem to have drawn him away from the attractions of the editorial chair, and only at the last moment he leaves by force the seat which he has occupied for upwards of forty years.

The California Horticulturist.

This has passed into the hands of John H. Carmany & Co., of San Francisco. Mr. F. A. Miller still retains his editorial connection with it. It has always seemed to us to be well edited, and deserving equal rank with any other horticultural journal in the country. Is devoted mainly to Flowers, Tree-planting, and Ornamental Gardening on the Pacific

coast. Its success is much greater than we supposed such a journal was capable of attaining in that State.

Floral Catalogues.

The Seedsmen have vied with each other this spring, in attractive covers and illustrated interiors to their gaily-decorated Catalogues.

Vick's New Catalogue is resplendent with all the colors of the calendar, presenting a unique and ornamental appearance. The frontispiece is a sketch of a new Japanese Cockscomb.

Bliss' Seed Catalogue is portly, with valuable contents and a mine of floral and gardening lore. It contains nearly 200 pages of the most condensed matter, crowded with numerous illustrations, and every page surrounded by an ornamental border in characteristic keeping with the articles mentioned on same page. Quite a number of new illustrations of cyclamens, gourds, vegetables, rustic work, new plants and flowers are introduced, and the exterior is embellished with a new and very handsome Title. It contains the most matter of any Seed Catalogue issued in America.

Wood & Hall, of Geneva, N. Y., issue a very pretty Floral Catalogue, printed in the neatest manner on tinted paper, with appropriate cover and interior illustrations. This young and enterprising house deserve credit for their taste and energy, and should receive encouragement.

Briggs' New Catalogue, issued by Briggs & Brother, Rochester, N. Y., has several novelties in the way of illustrations. The cover we do not understand, we cannot describe—it is beyond our powers of description. It is gold, and gilt, and goddess, and brown, and bronze, and black, flowers, screens and pedestals,

all sketched in a way we have never seen before; while the last page somewhat resembles the title of a Japanese Bible. Throwing all humor aside (for we like the firm; its reliability, and good character and enterprise are beyond question), the interior of the Catalogue is equal to the best issued by American seedsmen. The colored plate of the new Cocksecomb is really a beauty; so also the plate of Verbena, a novel form of colored plate, with pink and other colors on a black ground; also the engravings of the numerous chromos are well executed.

Henry A. Dreer issues his Catalogue in usual style, introducing novelties and some new illustrations.

Peter Henderson & Co. were the first this year, we believe, in their issue of their Catalogues. They contain illustrated frontispieces, in colors, of the new Amaranthus Salicifol'us, and a large number of well-arranged pages of flower and vegetable seeds. We are informed that their business has prospered most gratifyingly since removal to their new location in Cortlandt street.

The Prairie Farmer.

Since the accession of W. C. Flagg to its staff as horticultural editor, its horticultural department has been the ablest and best conducted we have known of it for many years. The times now demand more practical matter and less philosophy. Mr. Flagg's department is notably practical, less theoretic, and with more common sense in its ideas.

Errors.

On page 57, February HORTICULTURIST, read the following corrections for typographical errors:

Sedums for *Sedumes*.

Mesembrianthemums for *Mesembryanthemums*.

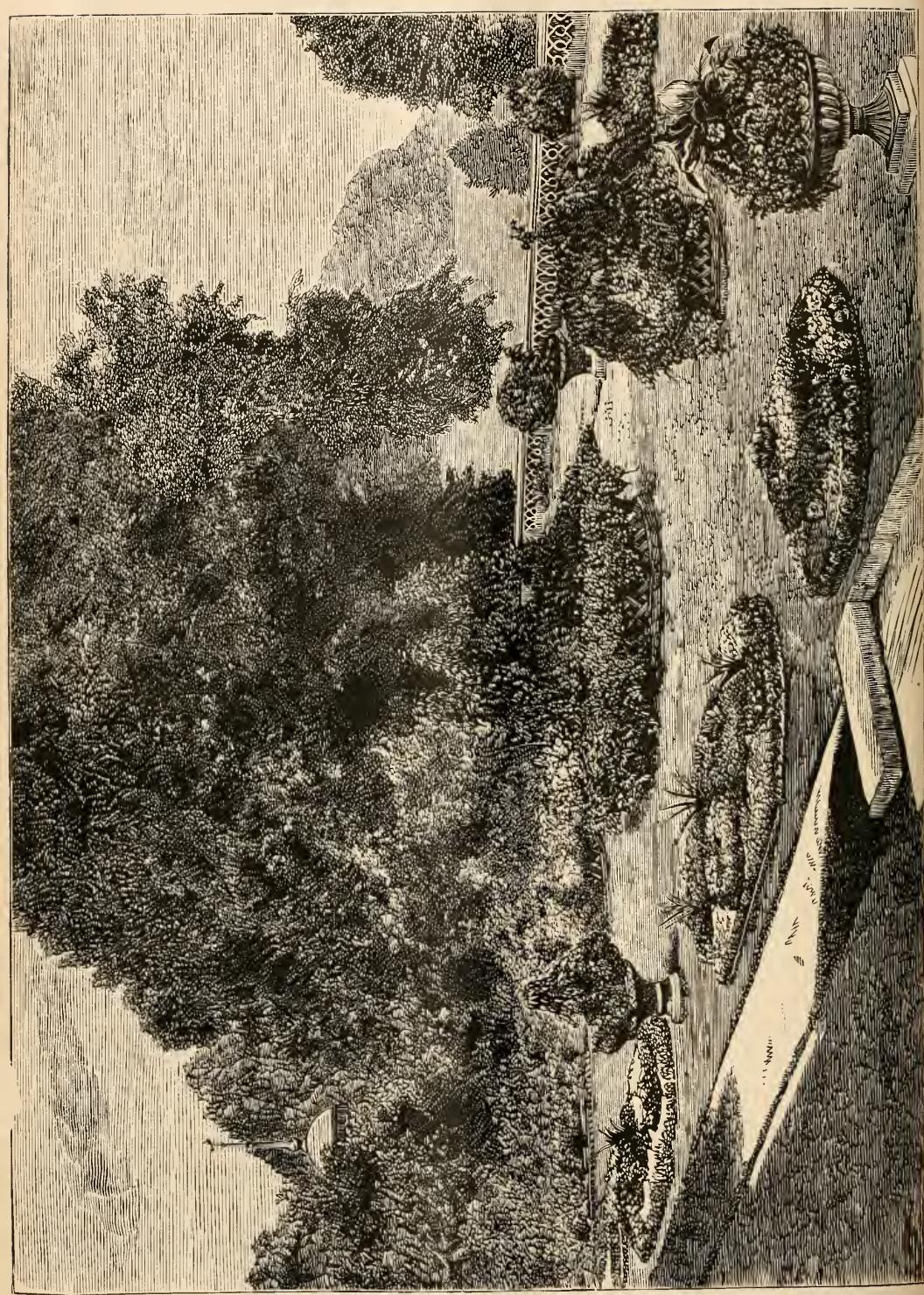
Sempervivums for *Sempervivium*.

Purdy's Small Fruit Instructor.

The value of Purdy's Small Fruit Instructor which has been advertised in our columns heretofore, may be judged by the following subjects which it contains. "Small Fruits for the Family," "The Homes of the Farmer," "Advice to new beginners," "What we would do with 10 acres," "Profits of Small Fruits," "Secrets in making Small Fruits profitable," "Marketing Fruits," "Gathering Fruit," "Wagons for drawing Fruit," "Shipping Fruit that perishes quickly," "Size of Shipping Crates," "Plan for laying out and planting a 20 acre plot with Fruit and Vegetables," "Plan for a kitchen garden for Fruit and Vegetables," "Stands for gathering the Fruit," "Protection from Winds," "Raising New Sorts," "Manures," "Liquid Manures."

Strawberries—their profit—time to set—preparation of the soil—to grow large fruit—to produce fruit late in the season—mulching material—winter protection—taking up plants for setting—large and small plants—growing plants for re-setting—directions for setting—care of plants after setting—crooked *versus* straight rows—different modes of culture and varieties. The same of raspberries, blackberries, currants, gooseberries, and grapes. "Fig culture," "Plan for a drying house." Propagation of plants from root cuttings, etc., etc.

The work is finely illustrated with plain, easily understood drawings, and is of such a *practical* character that it should be in the hands of every man who owns even a rod of ground. Price, only 25 cents. Address, A. M. PURDY, Palmyra, N. Y.



THE Horticulturist

EDITED BY
HENRY T. WILLIAMS.

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Garden Topics.

BY THE EDITOR.

The Fountain Plant.

Despite the adverse circumstances which may have produced its failure in some localities, the general testimony seems to be in its favor, and the Amaranthus salicifolius is a success. It appears to have met with more success in northern latitudes than in southern ones. We notice that the most enthusiastic commendations come from gardens located along the Hudson river, or in Vermont and Massachusetts—uniformly wherever the soil has been sandy. On the grounds of Hon. Horace Fairbanks, near St. Johnsbury, Vt., there was raised last year, by Alfred Parker, his gardener, a plant which was $7\frac{1}{4}$ feet in height, and ten feet around the branches, with a stem six inches in circumference. (So says the *Vermont Farmer*.) The seeds were sown in a pot in the greenhouse, in March, came up well, and grew slowly for a while. Mr. Parker then potted them separately, and they soon began to grow with surprising rapidity. Some of them were kept under glass all summer, others upon the verandah, and others still in the open ground; and they have done equally well in every place. No one can see these fine plants without being struck with their graceful habit of growth, their long, pendulous, and beautifully waved and crinkled foliage, as well as the striking and finely variegated colors of the whole plant. The stems are a dark red with a fine polish, the leaves at the tips of the main stem and branches form plumes of mixed crimson, yellow and green, very clear and vivid in coloring always, but varying in shade and tint with the degree of exposure to direct sunlight. The older leaves are mottled red and green, growing darker and somewhat duller with age, but never shabby or unpleasing in hue. So far is this plant from requiring a cool atmosphere and shelter from the sun, that Mr. Parker's plants did not begin to grow rapidly until warm weather began, and those that have had the most sun have grown the best and exhibited their desira-

ble characteristics the most satisfactorily. Altogether, we pronounce the "Fountain plant" a decided success, and a valuable addition to our list of ornamental plants for either indoor or outdoor decoration.

The Value of Planting Ornamental Trees.

It is really encouraging to behold our State Horticultural and Pomological Societies actually leaving the dry and profitless discussion of fruits, and taking up more time with the search for information about planting more trees, shrubs, vines, and ornamental plants. The difference between growing fruits for the palate for profit, or plants for their ornamental value, is decidedly marked. We are reminded, in this connection, of the remarks made some time ago by S. B. Parsons, before one of the Clubs of New York, in the course of which he said :

" Those who grow fruits for market do so for the purpose of making money by filling the stomachs of their customers. This is certainly a commendable and legitimate transaction, and I would not wish to discourage any one who is engaged in this business; still, there is very little in the mere act of growing fruits or plants for sale, that will develop the higher elements of our nature. But, on the other hand, the man who purchases a fine tree or shrub for the purpose of ornamenting his grounds, does not look upon them as a source of profit, but purely as an ornament—something that he can and does enjoy, free from sordid thoughts. I have been all through the various fruit 'fevers' that have prevailed during the past twenty years. I planted a large pear orchard; but the blight killed a portion, and a dry summer finished the remainder. When the grape fever was at its height, I planted two acres of Delaware; but my profits have been exceedingly small. Other varieties have done better, and with some kinds of fruit I have been partially successful. The taste for horticulture is rapidly increasing, and probably in no one branch is it more apparent than that of ornamental plants. Few men will, at the present time, live in a house not surrounded with ornamental trees. These may not be of the most costly varieties; and it is not necessary that they should be, for the dearest are not always the best. Our native trees are as beautiful as those of any other country, and the masses should become better acquainted with them by planting specimens in their grounds. I do not know of a more beautiful tree than the tulip, or whitewood, as it is sometimes called. The sugar or silver maples, liquid amber, magnolias, and scores of other native trees are to be had very cheap, and often for the mere cost of digging and planting.

" There is, however, a great want of taste in those who plant trees about their dwellings, and a majority of our people place them too near; and when they become large they overshadow the buildings and make the place look gloomy. No large trees should be placed nearer than one hundred feet to a dwelling-house. Place your large trees in a group, where they will form a background, and then gradually tone down with smaller trees and shrubs, until you reach the house, leaving it free to sunlight and air. Evergreen trees may also be planted in groups, or as borders to extensive grounds, and smaller evergreen shrubs placed within or by the side of them.

" There is too much sameness in the appearance of the leaves of our large evergreen trees to furnish a very great variety; but, by introducing what are termed the

broad-leaved evergreen shrubs, a striking effect can be produced. The rhododendrons are probably the very finest and best of all. Their leaves are not only superb, giving a cheerful appearance to a garden even in winter; but their flowers add another charm, which must be seen to be appreciated."

Remedies for Cabbage Lice.

The best remedies for this garden pest come from men who have actually experimented. We give two, which have proved successful, by gardeners. If any know more, we would like to hear of them.

A Kentucky gardener sends the following:

No. 1.—As soon as the plant begins to head, or as the louse makes its appearance, open the leaves carefully with the fingers, and sprinkle common salt between them. This is said to be an infallible remedy. We have used it with entire success. Plants used in this way produce larger and more solid heads than those left to themselves.

A California writer sends the following:

No. 2.—Two tablespoonfuls of kerosene mixed with a pint of water, and applied by rubbing it on the outside leaves. A couple of applications is usually sufficient.

New Rose, "James Sprunt."

This new climbing rose will be found one of the most valuable in the Southern States. In the Northern States it will do for summer exposure or greenhouse culture only. It grows to a height of six to ten feet in one season, blooming monthly. The bud is of dark rich crimson, becoming somewhat lighter when expanded, quite fragrant. It is thought by many to be only a "sport" from the well-known monthly crimson rose *Agrippina*, but is a quicker, more vigorous grower, and is hence more valuable as a climber or pillar rose. It was raised by James Sprunt, of Keenansville, N. C., the same horticulturist who originated the famous yellow tea rose "Isabella Sprunt."

The First Fuchsia.

The history of the first fuchsia, its introduction to Europe, and the commencement of its subsequent popularity, form a very romantic story, and we condense it from the original story as told by the *Gardener's Chronicle*:

Old Mr. Lee, a nurseryman and gardener near London, well known fifty or sixty years ago, was one day showing his variegated treasures to a friend, who suddenly turned to him and declared, "Well you have not in your collection a prettier flower than I saw this morning at Wapping." "No, and pray what was this phoenix like?" "Why, the plant was elegant, and the flower hung in rows like tassels from the pendant branches, their colors the richest crimson; in the center a fold of deep purple," and so forth. Particular directions being demanded and given, Mr. Lee posted off to the place, where he at once perceived that the plant was new in this part of the world. He saw and admired. Entering the house, he said, "My good woman this is a nice plant, I should like to buy it." "Ah, sir, I could not sell it for no money, for it was brought me from the West Indies by my husband, who has now left again, and I must keep it for his sake." "But I must have it." "Here," emptying his pockets, "here is gold, silver and copper;" (his stock was something more than eight guineas). "Well-a-day, but this is a power of money,

sure and sure!" "'Tis yours, and the plant is mine; and, my good dame, you shall have one of the first young ones I rear, to keep for your husband's sake."

A coach was called, in which was safely deposited our florist and his seemingly dear purchase. His first work was to pull off and utterly destroy every vestige of blossom and blossom-bud; it was divided into cuttings, which were forced into bark beds, and hot-beds, were re-divided and sub-divided. Every effort was used to multiply the plant. By the commencement of the next flowering season, Mr. Lee was the delighted possessor of three hundred fuchsia plants, all giving promise of blossom. The two which opened first were removed into his show-house. A lady came:

"Why, Mr. Lee, my dear Mr. Lee, where did you get this charming flower?" "Hem! 'tis a new thing, my lady—pretty, is it not?" "Pretty! 'tis lovely. Its prie?" "A guinea. Thank your ladyship;" and one of the two plants stood proudly in her ladyship's boudoir. "My dear Charlotte! where did you get that elegant flower?" "Oh, 'tis a new thing; I saw it at old Lee's; pretty, is it not?" "Pretty! 'tis beautiful! Its price?" "A guinea; there was another left." The visitor's horses smoked off to the suburb; a third flowering plant stood on the spot whence the first had been taken. The second guinea was paid, and the second chosen fuchsia adorned the drawing-room of her second ladyship.

The scene was repeated, as new comers saw and were attracted by the beauty of the plant. New chariots flew to the gates of old Lee's nursery ground. Two fuchsias, young, graceful, and bursting into healthful flower, were constantly seen on the same spot in his repository. He neglected not to gladden the faithful sailor's wife by the promised gift; but ere the flower season closed 300 golden guineas clinked in his purse, the produce of the single shrub from the window in Wapping; the reward of the taste, decision, skill and perseverance of old Mr. Lee.

Filberts.

It is stated that fresh filberts imported from Kent, in England, with their heavy green husks on, are selling in our Broadway fruit shops, for 80 cents per lb. This raises a query why we cannot as well grow them here; our climate is certainly as well adapted to the shrub, as could be desired—and in the Middle States, especially, the peach districts of the Delaware Peninsula, the filberts would be a natural success, making thrifty growth, and abundant fruitage. Our nut bearing trees deserve better attention.

Soot.

The large quantities of soot which accumulate in and around the chimneys of country houses, can be turned to excellent account in our gardens.

Twelve quarts of soot in a hogshead of water, will make a powerful liquid manure, which will improve the growth of flowers, vegetables or root crops. In either a liquid or solid state, it makes an excellent top-dressing for grass or other cereal crops.

A List of Roses.

At this season almost every one is making their selection of roses. We need not give a list here of any elaborate varieties, but only repeat the following, which, by general agreement of the florists, is the best for ordinary amateur culture.

General Washington—Brilliant, rosy carmine, approaching to scarlet; very large and fine form; free bloomer.

Caroline de Sansal—Clear, delicate flesh color, becoming blush; large and full.

La Reine—Brilliant, glossy rose color; very large; cupped and beautiful.

John Hopper—Deep rose, with crimson center; very large and fine form.

Victor Verdier—Clear rose, globular, fine form, and free bloomer.

General Jacqueminot—Rich fiery crimson; abundant bloomer. One of the best for bouquets, but casts its petals too soon for a garden bloomer.

Baronne Prevost—Deep rose, very large and fine; free bloomer; vigorous grower.

Anne de Diesbach—Bright rosy carmine; beautiful form; very large and double.

Madame Alfred de Rougemont—Pure white; large and very double; profuse bloomer.

Triomphe de l'Exposition—Rich deep red, shaded with crimson; flowers in large clusters.

Sidonie—Light pink; very large and full; fine in autumn.

New Remedies for Insects.

The following valuable remedies for insects are furnished by Charles R. Dodge, Assistant Entomologist of Department of Agriculture, and also the Entomological Editor of *The Rural Carolinian*. They are recommended as simple and reliable:

Pear Slugs.—This insect, which sometimes plays such sad havoc with the foliage of plum and cherry trees, may be destroyed by frequent applications of a mixture of lime, soot and soap-suds, by means of a garden syringe. The mixture is made by adding to twelve gallons of cold water, one bushel of soot and half a peck of un-slacked lime, allowing it to stand one day to settle, after which is added one pound of soft soap dissolved in warm water.

The White Grub.—This destructive insect, producing in this country the May beetle, (*Lachnosterna*), and in Europe the beetle known by the common name of "Cockchafer," is well known to many of our readers through the damage it does to pastures and grass lands. Their mode of warfare is to devour the roots of the grass, causing the sod to die out in spots, and it is said that simply applying to the affected places water, in which petroleum has been stirred, will exterminate them. It is also recommended to keep down insects on plants. The small quantity of petroleum seems to impart its disagreeable properties to a large amount of water, and applied in this manner the plants are uninjured.

Mealy-bug.—The following remedy, tried upon grape vines (under glass) in Kellermont Gardens, Glasgow, was a complete success. The vines which were badly affected, were taken down, the loose bark scraped off, after which the back walls of the house were given two coatings of lime wash and glue, adding half a pint of turpentine to each gallon of the mixture. The rafters and glass were also given at intervals three washings of turpentine, and finally the vines themselves were given a good coating of the following mixture: Three ounces of soft soap, three ounces flower of sulphur, one pint tobacco water, two wineglassfuls of turpentine, one gallon of hot water, and clay enough to give it the consistency of paint. The result, with a top dressing of loam and horse dung, was healthy vines, and a fair crop of grapes, clean and free from mealy-bug.

Destroying Caterpillars.—An excellent remedy, which has been used on a large scale in Southern France, consists in a dilute solution of sulphide of potassium, at the rate of about one part in five hundred. The infested plants are to be sprinkled with the decoction by means of a garden syringe, and it is said that vegetation is not in the least injured by its application.

Improvements around Dwellings.

The following good suggestions are from the pen of Mr. D. Breckenridge, the Floral editor of the *American Farmer*:

The approaches of carriage drives to the country seats of our wealthy population, are very much too narrow; and the planting of tall growing trees, as well as of those of low growing, spreading habit, too near the verge, is a serious mistake which some owners of estates of considerable pretensions have found out to their cost. We think it would be well if those who contemplate planting ornamental trees, shrubs, etc., would observe the habit and size of trees of native growth of the kinds usually so much admired in their young state. For instance, a Norway Spruce, five feet in height, may have a handsome appearance when placed ten feet from the walk or drive, but fifteen to thirty years hence it will be a very different affair. But the Norway Spruce must always, however, have a prominent place in ornamental planting, being perfectly hardy and of good habit; and it would make an excellent background for avenue planting, if planted at a sufficient distance to allow of planting trees and shrubs of lower growth and distinct habit in front of them.

Then we have *Thujopsis Borealis*, Hemlock (*Abies canadensis*), and *Cupressus Lawsoniana*—the last a tree of handsome growth, but having planted a great many in years gone by, and having carefully observed it almost since its introduction into England, I am free to say that I have never seen a perfect plant of that variety; they invariably have a bare place somewhere. Nevertheless, this Cypress, I think, deserves a prominent place in ornamental planting. Of *Arbor Vitæ* we have two or three distinct varieties; and, again of Yews, we have those of both the erect and of spreading habit. Of Junipers, we may mention *J. Chinensis*, *J. Hibernica*; and of *Retinisporæ*, we have some hardy and pretty. In some situations, raised beds planted with Ivies, have a good effect; beds also of carefully selected hardy herbaceous plants might afterwards be introduced with much satisfaction, and with a little attention would give flowers the whole summer. Many undeservedly neglected plants might thus be again brought into favor.

Garden Vegetables.

We condense report from committee of vegetables, of Western N. Y. Society, as originally published in the *Rural Home*:

An expression of opinion as to the best and earliest tomatoes was called for. Mr. Charlton named General Grant as best for general crop. Mr. Elliott spoke highly of Hathaway's Excelsior as being next to Hubbard's Curled Leaf in earliness, smooth, solid, and more delicate than Trophy. P. C. Reynolds, Rochester, agreed with Mr. Elliott.

Sweet Corn.—Sylvester said Campbell's Early is the earliest. Elliott said Briggs' is earlier. Maxwell named Moore's Early Concord. Several spoke well of Black Sweet Corn, saying it is sweet and good.

Peas.—Dr. Beadle, Ontario, commended McLean's Advancer for later variety. In answer to inquiry: Champion of England, will yield more, but requires too much trouble in bushing. J. B. Jones, Macdon, likes the Edible Sweet Pod. P. C. Reynolds asked if any one knew of an earlier variety than Carter's First Crop, and was answered no. He also spoke of McLean's Little Gem as a dwarf of the best quality.

Beets.—The Egyptian Beet was commended by Mr. Elliott as earliest and best, but too small for the market gardener. He said it was four or five days earlier than Bassano. Sylvester named Hatch as best early. It was agreed that turnip-rooted beets should be cultivated shallow, so as to encourage forming root near surface.

Potatoes.—Mr. Fowler, Rochester, said Peerless yielded twice as much as Peachblow. Mr. Ryder agreed that it would yield twice as much, but was not as good. Mr. Sylvester—On rich, moist soil, worthless, but on a dry soil, of moderate fertility, excellent. Mr. Bronson—Good as Peachblow. Mr. Willard, Geneva, commended Campbell's Late Rose. Admitted that it was not quite as good as Early Rose. Mr. Van Dusen had raised some of Thorburn's Late Rose. Looked well, but had not eaten them. Mr. Elliott said that Thorburn's was a *sport* from Early Rose, while Campbell's was a *seedling*. Sports would produce part early and part late potatoes, while seedlings are uniform. Mr. Craine—Early Rose potatoes must be cooked right. If boiled in an iron kettle, and allowed to stand a few minutes, will taste bad, but if boiled in tin or porcelain, will be all right. Dr. Sylvester finds that Early Rose keeps till June, and will then steam up good. Digs his potatoes early, and keeps them in barrels in cool outhouses.

Parsnips.—Mr. Elliott had found the Student parsnip better than old varieties. It is of finer fiber, and sweeter. Sylvester indorsed Elliott's views. Mr. Brooks would commend the culture of parsnips to those farmers who have not yet dug their potatoes.

Beans.—Elliott prefers the White Wax, a snap bean, to the Black Wax. Remains tender as long, early, and its color makes it a better shell bean. Dr. Beadle prefers the flavor of China to Wax. Large Lima was generally commended as the best shell bean.

Turnips.—Dr. Beadle said they had in their market a variety called Nimble Dick, which is their earliest, and a variety called Sweet German, which they preferred for late.

Water Melons.—Mr. Elliott had tried a new variety, called Rattlesnake, which he thought better than any of the old sorts.

Best Six Pears.

Bartlett, Beurre d'Anjou, Howell, Duchesse, Lawrence, Seckel.

Advisable.—Beurre Bois, Clairgeau.

Best New Pears.—Souvenir de Congres, Dana's Hovey, Mount Vernon.

Small Fruits for the Family Garden.

Read, by Louis Ritz, before the Eastern Ohio Horticultural Society.

[CONCLUDED.]

Of all the Black-cap varieties grown for market, the Doolittle for early, to be followed by the Mammoth Cluster or large Miami are the best; the difference in earliness between the Davison's Thornless and Doolittle is so slight, and the production of the latter so much larger, that I hold it to be more profitable of the two. The Mammoth Cluster I would consider the queen of Black-caps, as it stands unsurpassed for size, flavor or productiveness, if it was not too soft to be shipped a great distance; in our Cincinnati market it sells well, but dealers will not buy it for reshipment, and prefer for that purpose the common Miami.

Our Chillicothe friends spoke last winter very highly of the Chapman, and if it has all the good qualities of the Mammoth Cluster, without this defect, it should be planted in preference. If our pleasant visit to Chillicothe, last summer, had not convinced us to the contrary, I would feel inclined to consider our Ross county friends a very selfish people for keeping this Chapman berry so many years to themselves, and I hope they will furnish us to-day with some additional information.

I received some time ago from Kentucky, the Kentucky Mammoth, which if not identical with the Chapman, may prove its equal, being a strong grower, large, firm and very productive.

The above varieties will do equally well for the garden, where also the Miller or any of the Ohio Everbearing species would be appreciated.

Of red raspberries the Philadelphia is certainly the most productive in rich soil; of good size, but rather soft and deficient in flavor; its greatest defect, however, is its dark, dull color. In some markets color may not be so much of an object, but in Cincinnati the Philadelphia sells well only, if no lighter colored berries are in market, otherwise it will bring no more than Black-caps.

The hardiest of the Antwerps with me is the Clarke, which stood even the extremes of last winter without being injured, while the Philadelphia suffered severely for the first time. It is a strong, rampant grower, and on that account should be cut back during the summer, very large and productive, of fine color and highly flavored. In light soils the Clarke does not seem to be as reliable as in strong ones. Then we have the Parnell, not quite as hardy, but does well with a light shelter, and I may here state that both raspberries and blackberries seem to do better in young orchards, the shade being beneficial and trees protecting the more tender kinds in winter.

For the garden, the *Surpasse Fassloff*, *Knevitt's Giant* and *Belle de Fontenay* are valuable; the latter yielded, the past summer, berries from June to the end of October.

Unsurpassed for home use is the *Surprise d'Antoinne*, bearing two crops, each equal to, if not excelling in quantity, the Philadelphia; it is of very large size, of the most delicate yellowish-white tint, and in flavor the superior of Brinkle's Orange or Arnold's seedlings.

The *Herstine* is the only new variety of great promise; it is a seedling of the Philadelphia, and will be the berry for profit, if only one-half the praise awarded to it is

deserved. It is a strong, healthy grower, thus far hardy and quite productive. I would not say more from my own observation, as I have not tried it long enough.

From actual measurement I found the following varieties to yield per stool, in 1871 and 1872, as follows:

	1871.	1872.
Naomi	$1\frac{1}{4}$ quarts,	$1\frac{5}{8}$ quarts,
Franconia	1 "	$\frac{1}{2}$ "
Belle de Fontenay	$\frac{1}{2}$ "	$1\frac{1}{8}$ "
Clarke	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "
Parnell	$\frac{8}{8}$ "	1 "
Philadelphia	2 "	$1\frac{3}{8}$ "
Surprise d'Antoinne	$1\frac{1}{2}$ "	$2\frac{3}{8}$ "

I am satisfied that it will, when once well known, become a favorite in every fruit garden.

Blackberries.

Before raspberries are fully gone, blackberries make their appearance in market; I consider them, next to the strawberries, the most profitable fruit crop, while they require less labor and are more reliable. They should be planted in moderately good soil, 4 feet by 8; very rich land should be avoided, as they are not particular about soil or location, and the canes in rich land would grow so strong as to require too much pruning, while they are apt not to mature their wood and thus become subjected to being winter-killed. A repeated shortening-in of the cane and side branches during summer is beneficial, as they will become thereby self-sustaining, and be covered with berries from the ground upwards, instead of bearing only at the top. When desirable to stake them, I would recommend Mr. Ohmer's admirable plan, who trains blackberries and raspberries on wires, which requires less labor and expense than stakes, while better fruit is developed and the picking facilitated.

Of all the varieties that have appeared from time to time, we have only the Dorchesters, Wilson's Early, Kittatinny and Lawton—as valuable—left, and where the Wilson succeeds, the first may be dropped, as earliness is all that recommends it.

The *Wilson* is the largest and earliest, very productive and will yield more money per acre than any other; but the great question is its hardiness. The strong canes with me are regularly killed to the ground by frost, and only the smaller ones bear, but my soil is new and very rich, which may account for it; on thinner land they will prove, probably, more hardy.

The *Kittatinny* is also very large and productive, of excellent quality, and continues longer in bearing; it seems to succeed almost everywhere.

The *Lawton*, in strong loam, is very productive, but not reliable in light soils; wherever it does well, it will stand a comparison with the other varieties, while if you let it get fully ripe, there is no better berry for the table. I would recommend it for the garden, but not as a shipping berry, as it easily changes color.

For some years past a fungus or rust has been thinning out blackberry fields, and in some localities it has also attacked Black-cap raspberries; where it once takes well hold of the plants, it is as sure death as the pear blight, and if the plants are not removed, it will spread and destroy the patch in a few years. I think that a superabundance of moisture is the first cause of it, as some years ago, when we had a very cool and moist spring, I saw many plants in a Kittatinny patch attacked.

During the exceedingly dry summer, however, which followed, the rust disappeared and the plants seemed to recover, though they never bore well since. No remedy is known thus far, and I hope some of our friends present may be able to throw more light on the subject.

Gooseberries.

Gooseberries seem for some years past to have attracted less attention ; they are getting scarce in market, and consequently bring higher prices. We are dependent on the Houghton, Mountain Seedling, and Downing, of which the first is the most productive ; the second the largest and the best for market when ripe ; the third the best in flavor.

It is to be regretted that no efforts have been made to produce, by crossing the above with the Lancashire varieties, some larger and superior sorts, that would resist better our summer climate and prove valuable for the table. In speaking of English as Lancaster varieties, as we generally style them, although they grow to as great perfection anywhere on the continent of Europe as they do in England, I am of the opinion that they should not be abandoned without further trial. I doubt, myself, their being profitable in large plantations, as they would hardly receive the necessary care, but the amateur would find his labor well rewarded. I have grown English gooseberries for about twenty years, and never failed in raising a crop, when they received proper attention. I know they will mildew, but not worse than the Houghton, if the latter is left to itself.

The gooseberry requires a good, deep soil, replenished annually by some rich compost, and the ground has to be kept loose and free from weeds, as it has to be mulched. In Europe they train the gooseberry and currant into small trees, about two or three feet high ; this will, however, not do in our climate, but I think we could improve on this method by raising the bush on a single stem, two or three inches high ; this would allow of a better circulation of air and light, two great requisites in gooseberry culture. Let any one try this, and apply the flour of sulphur once or twice during the season, which I find quite necessary even with the Houghton, and he will be sure to reap his reward by raising a crop of large and delicious berries.

Currants.

Of this fruit we have a good many varieties, but only a few that are, with common culture, productive enough to make good returns ; these are, the Red and White Dutch, and the Versailles, the latter with proper attention yielding more, larger and better fruit than the former. Some horticulturists seem to think the Versailles, and the Cherry or Victoria as identical ; this is a mistake ; the latter has shorter bunches, berries larger, dark red, very acid, maturing early, suffering frequently from spring frosts, and being on this account a shy bearer. The Versailles, on the contrary, is as productive as the Red Dutch, bunches long, berries large, transparent red, and having, when fully ripe, less acid than any other currant. The great trouble is only to find the true Versailles, as there are more Red Dutch and other kinds sold under that name than genuine plants. Currants at three dollars per bushel, the average price of the last two years, equal to \$500 or \$600 per acre, pays well enough, and more should be planted.

For the home garden, besides those named, the Frauendorf and Grape are worthy of mention. The lover of Black Currants will be pleased with the Black Naples. Of the new varieties, the Heterophylla (ant-leaved) makes a very ornamental bush, and a new kind, without seeds, lately received, will, if productive, prove valuable.

Currants, to do well, require about the same treatment as gooseberries, but look out for the worm, and dose him with hellebore, or cut the shoots he has attacked off during the winter; they can be easily distinguished.

It may not be out of place here, to remind you that in many parts of Ohio there is land well adapted to the growth of Whortleberries and Cranberries, which is now lying waste; experiments in this direction would probably lead to profitable result, and should be encouraged by this Society and our State Board of Agriculture.

Manure.

And now, in conclusion, a few words about manure. A liberal supply of it is, for all kinds of small fruits, not only a blessing, but a necessity. Animal manures range in value as follows: Cow, hog, sheep, horse's manure, and all should be well decomposed; ashes as an additional top-dressing in the fall or early spring, is very beneficial. Blood and horn shavings are the best for raspberries; salt scattered annually at the rate of one or two bushels per acre, over strawberry beds, will interfere materially with the grub worm, and assist the soil in retaining moisture; night dirt and hen manure should be applied sparingly, either in a liquid state during the fruiting season, or as a top-dressing after the frost has left the ground. Concentrated fertilizers, phosphates, guano, etc., applied as a liquid during the fruiting season, will materially increase the crop. I would, however, not advise their use, except where animal manures are given to the same land. They stimulate the soil to great exertions; and will naturally impoverish it, if the deficiency is not made up in some other way.



Flowers for Ornament and Decoration.

BY ANNE G. HALE.

[CONCLUDED.]

A TABLE or stand bouquet should be somewhat of a pyramid in shape, to form which, any flowers of medium size are proper—accompanied by their complementary colors in the racemes and spikes of finer florescence. But little verdure is needed—sufficient to outline the several groups that make up the assemblage, and to give a handsome base—unless the floral colors contrast well with the tinting of the vase. Though colorless, crystal vases are preferable for flowers, always. The opaque Parian, and the grays and neutral tints of ordinary biscuit-ware can be used advantageously as table or window vases, if the receptacle be nearly hidden by foliage and drooping flowers, or vines. Saxifrage, money-wort, ground or coliseum ivy, and German ivy, make a fine veil-hanging over and about a vase, and lend dignity and grace to the bouquet. The garden and orchard, from their flourishing plants, blooming shrubs, and blossoming trees, can send many species and varieties to make

these collections beautiful; while forest and fell, upland and moor, afford many lovely wildings. Nor will their more delicate relatives of the conservatory lose aught of their beauty or grandeur when mingled with them. Branches from plants of variegated foliage, or boughs of bright autumn leaves, without blossoms, make very elegant bouquets. The vase which they occupy should stand on a window seat, or on a table near by, that the sunlight may fall upon them; as the rays stream through and among them, their gorgeous colorings appear to fine advantage.

A perforated plate or cover for the top of a dish or vase is a great convenience for arranging flowers. There is then no danger of crowding them, and we can quickly see the effect of her work, as the bouquet is, as it were, *built* where it is to stand. The vase should be first filled with water, then the cover laid, and the stems inserted in the perforations. It is, however, usual to tie the flowers together in some manner; let it be as loosely as possible; see that there is no crushing or overlapping of flowers or buds; nor yet let the larger flowers be too prominent. When you have large and choice flowers, it is better to place one specimen, with its buds and appropriate adjuncts of foliage, and vines (both, or either, as the habits of the blossoms require) in a receptacle by itself. Several vases filled in this way make more effective display than if all were crowded into one group, and lend an air of elegance to a room, if disposed in proper localities. Bouquets of this style are more proper for the guest-chamber and the dressing-room. Flowers of medium size and delicate foliage should be used; their colors—speaking of quiet and repose—must be of the more subdued tints and the tenderest green.

For a hand-boquet, both foliage and flowers must be nicely chosen. Fragrance, not so important in other collections, is here an indispensable requisite. Among the most desirable verdure are, *Aloysia citriodora* (called by some Lippia); the lemon-scented verbena, with its elegant lanceolate leaves; sprays of the exquisite sweet brier (not omitting its lovely buds and blossoms); myrtle, box, lavender, the various fragrant geraniums, and odorous mints. Of the minor blossoms, mignonette, “the fragrant weed,” is the favorite; then come heliotrope, stevia, violets and honeysuckles; mahernia, acacia and heath; while dianthus, in all its species, orange blossoms, tuberoses, lilies and roses add both beauty and fragrance; and pansies, daisies, forget-me-not and jasmine are always welcome.

A hand-bouquet should not be too large to be carried conveniently. It may be six inches (better five or four) in height, and four in diameter at its base. The flowers should be arranged in a somewhat conical shape; and though the bouquet must be regular in outline, it must not be too set. The green, projecting here and there to give distinctness to the several groups of which it is composed, will relieve it of formality, if the colors and forms are not too monotonous. A pleasing variety of these must be obtained, yet regard must be specially paid to proper contrasts and harmony. Many fine flowers are short-stemmed; others have very weak stems. To lengthen or to strengthen these, use slender twigs, or bits of willow or matchwood, or straws of matting, or broom-corn, fastening the flowers to these by hair twine, fine cord, or thread. When flowers are thus *improved*, a bit of wet cotton or moss should be wound over and around these false stems. Before making the bouquet, all that need this assistance must be made ready; then select the different groups, assort

them according to colors and forms, and apportion the green to each set. Damp moss and lycopodium will be needed, if the flowers are expected to keep fresh any length of time. To begin, take some handsome spike of florets having a long, strong stalk, with two or three slender spires of green (these also having long, strong stems); tie a cord by one end around them and bind them together for half an inch. Then arrange small groups of larger blossoms around these, just far enough below to show the first set handsomely, and wind the cord as before, and so proceed till the bouquet is of proper size. A few racemes or pendant flowers should be among the last set, which should be composed of panicles of fine florets, and then a fringe of drooping green, or a border of handsome leaves—myrtle, orange, camellia, or kalmia. Leave two or three inches of the bare stems, and wrap around them a strip of wet cotton batting; then cover this with a piece of tinfoil, and tie around about half way to the border, a neat bow of white ribbon. This is the most usual form of hand-bouquet; but a very pretty style is made by taking one beautiful flower for the center, surrounding this with contrasting florets; then larger flowers alternating with spikes and panicles of smaller; then a fringe of very fine and delicate florescence, a handsome border of foliage finishing the collection; very little green—and that of the most delicate sorts—projecting at rare intervals among the flowers. For this a stout stick is needed, upon and around which the flowers and foliage are bound, as in making the preceding bouquet. These are the popular methods of arranging flowers to be carried in the hand both as an ornament and a source of pleasure. But a few lilies of the valley with their own elegant leaves; a half-blown rose and buds; mignonette and sweet peas; or geranium leaves and carnations, afford more satisfaction, generally; are more effective in their simplicity, and can be disposed of more readily and gracefully as a personal decoration, at the belt or at the neck-tie, than those more elaborate collections, which often require some strength to carry in an upright position, and when not held thus must dangle heavily from the arms, or necessitate the services of an attendant. Button-hole bouquets and nosegays for tiny individual vases, at the dinner-table, should consist of only one handsome specimen of some elegant flower of small size, with its buds, or two or three slender spikelets of florets in a contrasting tint, and a little delicate verdure—all of the choicest sorts tied loosely with a bit of narrow ribbon. A little wet cotton should be wrapped about the base of the stems of a button-hole bouquet; or it should be inserted in the small tubes holding water, which are now made to attach to the button-hole; the small phials used for homœopathic medicine serve very well for this purpose, and can be fastened by a loop just inside the button-hole. Small bunches of flowers for looping or festooning the skirt of a lady's dress, should be of the same description as those used for button-hole bouquets. A half open rose with buds; a tuberose with bouvardia; a fuchsia and stevia; a carnation and heath; lilies of the valley and forget-me-not; violets and myrtle; sweet peas and mignonette; azalea and heliotrope, with geranium leaves, aloysia, or myrtle for verdure, are always elegant.

When decorations for the hair are wanted, drooping racemes, delicate flowering vines (or of verdure only) and pendant blossoms, with a few of erect clustered growth should be chosen. Of these, the most effective is smilax—*Myrsiphyllum asparagoides*—with glossy light green leaves that retain their freshness in the dryest atmos-

phere a long time. Its long slender stems of foliage, laid lightly on the head and drooping to the shoulder, with two or three rosebuds, lilies of the valley, fuchsias, or any of the papilionaceous blossoms make a very becoming decoration which is easily arranged. The maurandia, when in bloom, is a pretty vine to garland the hair; a bit of scarlet geranium or verbena should fasten it. Fronds of the slenderest ferns are very graceful head-dresses, with the addition of an azalea, or camellia, or rose; and long ribbons of variegated grass, with its plumy blossoms, are handsome verdure for stevia and bouvardia; while rose or lemon geranium leaves accord well with carnations or roses, and acacia or heath with tuberoses and adlumia. with its twining stems and drooping florets, and are very beautiful for the same purpose. But one caution is needful: there is danger of too much ornament; the lighter and simpler the arrangement, the more becoming it will be. And the same rule holds good in all floral decorations; crowding, and excess, and profusion detract from beauty and grace.

Strawberry Culture.

EDITOR OF THE HORTICULTURIST.—The article of F. A. Simpkins, on strawberry culture, in the January No. of THE HORTICULTURIST, should be qualified in some of its statements.

The object in mulching strawberries is fourfold:

First.—The first and primary object in mulching strawberries is to protect them during the late fall, winter, and early spring months. The object is not so much to keep the ground from freezing as to prevent the frequent thawing and freezing of the surface of the ground during alternating warm and cold days and nights. When the surface of the ground is once frozen in the fall, it is important that it should remain frozen until spring. This is especially the case with light soils. The repeated freezing and thawing of the surface very frequently results in the breaking of the main roots of the plant in case the ground is very wet. In case the ground is dry, the frequent freezing and thawing of the surface renders it still dryer, and the plant suffers for the want of moisture at the root, and from the action of the wind in moving the soil from the roots. These remarks are applicable to the light sandy soils, especially of the prairies of the West, and in latitudes where snow cannot be depended on for a covering during the winter, and where it is sufficiently cold during the winter months to freeze the soil frequently to any considerable depth. So much for winter mulching.

Second.—A second object in mulching strawberries, is to keep the surface of the ground cool, moist and mellow during the hot, dry season that usually sets in about the time the fruit is maturing. If the ground becomes hot, dry and hard just at this juncture, the crop will be cut short from one-half to two-thirds in quantity, and will be very inferior in quality. The quantity of mulching that can be used to advantage while the fruit is forming in the spring, will of course depend much on the mode of culture. On this point it will be sufficient to say, that let the mode of culture be what it may, whatever ground is not covered with vines, should be covered with mulching. If mulching has been used during the winter for a protection, it is well to remove it in the spring until the ground warms, and then to replace it.

Third.—A third object in mulching strawberries, is to keep down the weeds while the fruit is maturing. If it is replaced or put on in the spring in proper quantity, just after the weeds have started, it will keep them down pretty effectually until the crop of fruit is gathered.

Fourth.—A fourth object in mulching strawberries, is to keep the fruit clean. On light soils this is an important item. Strawberries grown upon the light soils of the prairies of the West, or upon the sand hills of Michigan, are often rendered unmarketable by the sand that is dashed upon them by heavy rains.

I might add as a fifth and collateral reason for mulching strawberries, that a good coat of mulching facilitates the picking of the fruit, and renders the work much more pleasant and cleanly.

These remarks might be extended by way of showing what is the best material for mulching, and what is the proper time for putting it on in the fall and for removing it in the spring; much might be said by way of illustrating the important collateral benefits of mulching, in giving the moisture and the gases of the atmosphere, access to the soil and to the roots of plants, etc., but I waive the consideration of these topics for the present.

Onarga, Ill.

W. P. P.

Are Fruit Trees Gregarious.

IN your issue for November, page 342, Mr. R. W. Furnas, of Nebraska, asks: "Are fruit trees gregarious or clannish in their formation or development?" My observation is, that that they are not, for I have seen two trees produced from one pit containing a double seed, each tree producing a peach different from the other. Again, Mr. Clement of Branch county, Michigan, has an apple orchard of 200 trees, the seeds for which were saved from Fall Pippins, gathered from a tree in Ohio; in his orchard there are trees ripening their fruit in August and others later, and some will keep until April and May. Some are large and fine flavored, others are small and inferior; and these are intermixed promiscuously over the orchard. Again, in 1859, I sold five peach trees to a Dr. Merideth, in Hannibal; they were to be one of a kind ripening from the earliest to the latest; in 1861 they all bore, and what was my astonishment to be informed that none of them ripened until the middle of August, and in ten days were all ripe and gone. The trees were planted in rich garden soil, and made a vigorous growth. I had no reason for doubting the statement, yet it was a circumstance which I wished to make amends for to the fullest extent. I visited the place the next summer, and found the trees bearing according to order, and that the season before was only a sport. Although the instance which he gives would rather go to show that there was a clannish development in his case; at least it's a condition which I would not like to attempt to produce from seed, and one that would require care on the part of both budder and planter to produce from budded trees. I am aware that our Western soil is spotted, there being often three or four different varieties of soil in one forty acre lot, which will make quite a difference in the size and color of fruit, but I don't think there is enough to change a yellow freestone to a red cling. Perhaps with another year's experience, friend Furnas may find some way to account for this singular circumstance, or that it was only a sport.

S. F. T.

Building Greenhouses.

WILL you please to advise me in regard to these enquiries :

First.—My employer is building a new place, and quite a discussion has arisen in regard to the greenhouse. In making some improvements, we excavated what was intended for a greenhouse cellar; others advise us now to close up the excavation, and have no cellar. My opinion has been asked and given as follows: Not to close up the cellar, but build it up frost-proof with proper ventilation, covering over with hard pine plank, tongued and grooved, and made water tight, the cellar to be kept for the storage of some plants and shrubs which will not stand the winter outside, and yet is not desirable to have them in the greenhouse.

Second.—In making borders for a hot grapery, which is the best, to make them all outside, or all inside, or both?

Third.—In making the borders for a cold grapery, which is best, all inside, or outside, or both?

The situation of the above place is a good deal exposed, standing about two hundred feet above tide water, and is at present very much exposed to the north and north-east winds. The building is intended to be about one hundred feet long, running north and south. The present calculation is to have a span roof, and to be divided into three apartments: First, on the north end, is to be a greenhouse; second, in the middle, is to be a forcing house for grapes, and third, on the south end, will, or is intended to be a cold grapery.

Any information from you or any other of the numerous patrons of THE HORTICULTURIST, will be thankfully received.

JOHN IRVIN.

Small Greenhouses.

A Question for "The Horticulturist."

WE have a small well ventilated greenhouse, double pitch roof, 50 x 11 feet, fully occupied only in February and March for starting vegetable plants for our market garden; balance of the year as yet unprovided for; house generally filled with lettuce; location four miles from Harrisburgh, Pa.; too far for the cut flower trade, and besides market gardeners as a general rule don't very well understand the management of an assortment of flowers. There are thousands of market gardeners through the colder States that use greenhouses as above, and look to THE HORTICULTURIST for advice and assistance, and while these might not succeed with a general assortment of flowers, could do well with some *specialty*. The propagation and culture of some new *rose*, for instance, for the *trade by mail*. Cannot some of the many old greenhousemen among your subscribers give us a hint. Many of your readers are owners of small greenhouses; they would like to use them to advantage, and I am sure would be greatly interested in the replies. After a little ventilation, if some greenhousemen would advertise in your columns desirable stock which they could sell us for the purpose named, or give us on a percentage, they would find plenty of takers, more I am sure than they have any idea of.

The question is, what will it pay us market gardeners best to raise in our small greenhouses, from the middle of April to the first of February following, location within four or five miles of any large country towns.

MARKET GARDENER.



Root and Top Grafting—Twenty-five Years' Observation.

BY PROF. JAMES MATTHEWS, IOWA AGRICULTURAL COLLEGE.

ED. WESTERN HORTICULTURIST: Dear Sir—I believe there is at this time no diversity of opinion among Pomologists in regard to the alleged fact, that many varieties of fruits are greatly affected in size, flavor, appearance, fruitfulness, and even hardiness, by being planted and grown in different soils, localities and climates. That trees of many sorts and varieties may grow healthfully and vigorously, and be perfectly hardy in California, which will kill out by the far more rigorous winters of Iowa or Wisconsin, all fruit growers recognize as an established fact. Whether the physiological reasons for these things are well settled and understood, I will not, nor need I, now undertake to say.

But it is my present intention to introduce another subject in regard to which, while it is of the deepest concern to all fruit culturists, there is not a concurrence of public opinion. This being so, I introduce the topic without apology, with my own experience, observations and conclusions, together with the testimony of other fruit growers of undoubted experience, for the purpose of eliciting the opinions of others on the question involved. I hope every fruit grower, especially in the West, will freely communicate all the facts and experiences he may have had, which are germane to the subject.

The proposition, or problem, is, are certain varieties of fruits more hardy and prolific, and of superior size, beauty and flavor, when top-worked, that is, budded or grafted (the stock being hardy) two to five feet above the ground?

As I am aware that this is a controverted point, I will submit a statement of a few of the facts upon which I maintain the affirmative, for the consideration of those whose opinions are adverse to mine, as well as for those who have formed no definite conclusions in the matter of controversy. I shall give names and localities, so that if any desire to institute further investigations, they will have a fair opportunity of doing so.

On the first of April, 1872, I spent most of the day in the orchard of Mr. Drury Overton, one mile and a half from Knoxville, Iowa. This orchard contains from fifteen hundred to two thousand trees, most of which were planted twenty-three and twenty-four years ago, consequently passed the terrible winters of 1855 and '56, and 1856 and '7. Mr. Overton is an old nurseryman, having commenced the business in Henry county, Iowa, about thirty years ago; has been engaged in nursery and fruit growing ever since; is a modest and rather reticent man, but one of the closest and

most vigilant observers in fruit culture within my knowledge. In planting this orchard it so happened that almost every variety set out was divided between root and top grafts, hence affording a very favorable opportunity of testing the advantages and disadvantages of the two modes of grafting. On the occasion stated, Mr. Overton accompanied me, and my subsequent remarks in quotations are substantially, and as nearly as possible, in his own words, and taken down in pencil by me as we passed and were observing each variety.

White Winter Pearmain—“Does twice as well top-grafted as on root graft.” Says, “This kind wants to be top-worked about five feet from the ground.” Says also, that “the fruit seabs badly, even grown in this way.”

Early Pennock—“Far better, and perfectly hardy when top-worked.” I will remark that this kind on my grounds, root-grafted, is only half hardy, and a poor bearer. What specimens there are, however, are very fine.

Hubbardson's Nonsuch—“Splendid when top-worked, and perfectly hardy, but tender and indifferent when root-grafted.”

Dyer—“A good bearer when top-worked; poor bearer when root-grafted. Hardy both ways.”

American Golden Russet—“Killed in 1855, '6, even top-worked” (thermometer 32 below zero), “but has not been hurt since. Perfectly tender, root-grafted.”

Roxbury Russet—“Does very well top-worked, but will not succeed root-grafted.”

Fulton—“Only bears well when top-worked, but is hardy either way.”

Swaar—“First rate, and good bearer when top-worked, but only succeeds in this way.”

Esopus Spitzenburgh—“First rate, perfectly hardy, and bears well when top-worked, but will not succeed root-grafted.”

These trees (two of them) have been planted out twenty-four years; stood the ordeal of 1855, '6, and 1856, '7, and now there are no sounder trees in the neighborhood. I tried this kind several years root-grafted, and after my best efforts entirely failed in bringing a single specimen to bearing size, but have known one or two instances where the fruit has been produced on root-grafted trees in clay soil.

Porter—“Fine, but only when top-worked.”

American Summer Pearmain—“Perfectly hardy when top-worked, but does not bear satisfactorily even then.”

Little Red Romanite (Gilpin)—“Hardy and a great bearer when top-worked; not hardy root-grafted.”

Winesop—“Far better and more prolific when top-worked.”

Michael Henry Pippin—“Good only when top-worked.”

Fall Pippin—“Fine and hardy top-worked.” This variety with me (root grafted) is only half hardy.

Jonathan—“Far better top-worked, standing side by side.”

Tulpehocken—“Fine and quite hardy top-worked.” In my grounds, root-grafted, this kind can only be considered half hardy, and is variable in quality.

Wagener—“First rate, and don't blight when top-budded.” In my grounds this kind, root-grafted, is the worst top blighter I have.

In the hard winters previously alluded to (1855, '6, and 1856, '7), Mr. Overton's

trees of Rambo, root-grafted (about one hundred), were all killed to the ground, while in Mr. John Gamble's orchard, about one-quarter of a mile distant, there were two trees of this kind, top-grafted, planted out in 1851, twenty-two years ago, which were uninjured, are now perfectly sound and bear plentifully.

I will state here, that in Mr. Gamble's orchard are four trees of what he calls "Early Sheep's Nose," which is a very fine apple and great bearer, ripening in August; perfectly hardy top-worked, but tender and worthless root-grafted. This kind came from a nursery in Henry county, Iowa, twenty-two years ago. I cannot make it out to be identical with any other known variety, though it probably is. Can some one give information about it? Being a constant bearer, it is a very profitable summer fruit.

To close this communication, already too long, I will say that I have in my grounds at Knoxville, several trees of Williams' Favorite, four of which are top-grafted four feet or upwards from the ground; have been in bearing about ten years, and have never failed to produce a good crop annually, ripening gradually from fifteenth of August to about the last of September. They are among the best, and by far the most profitable summer apple I have; while I have three others, root-grafted, and five of such will not, in proportion to age and size, produce as much as one of the top-grafted trees. I will add further, that from an experience with this kind of ten years' fruiting, it is, for all qualities, without a rival as a summer fruit.

Knoxville, Iowa.

Pear Culture in California and France.

EXPERIENCE has demonstrated that the pear withstands the vicissitudes of the climatic influences of California, even better than the apple; and that its culture in all parts of the State has met with complete success. It is undoubtedly better fitted to the warm sunshine of our long summers than the apple, though the latter may find its genial position at heights among the foothills and mountains where the pear would not as well succeed.

Warm, sunny France has ever been the home and paradise of the pear, and from there we derived all of our best varieties, until at last a few kinds were originated in our own Atlantic country, worthy of a place in the catalogues of good pears. With our climate, so strikingly genial for the growth of this excellent fruit, we ought to originate at least a few new varieties equal to the best, and we hope pomologists will turn their attention to this subject.

The pear, particularly the autumn and winter varieties, will bear transportation better than the apple, and bring a higher price both in the home and Eastern markets. Indeed, it has already become an export fruit for the European market, and one which will increase as the qualities for export shall become more fully developed by experiment, and the tastes of consumers consulted.

Of all fruits, perhaps no one is better adapted to general use, as an article of food. Its inviting appearance, sprightly vinous flavor, sugary, melting, aromatic taste and nutritious ingredients, both in its fresh and cooked state, should commend this fruit to an increased and extensive cultivation.—*Pacific Rural Press.*

The Mechanical Structure of Plants.

BY J. COCHRANE, HAVANA, ILL.

ED. WESTERN HORTICULTURIST:—The wonderful mechanism of the human eye; the arrangement and construction of the ear; the number and diversified uses of the muscles; the mechanical organisms of plants; the diversified combinations of the elements; the immensity, harmony and diversity of the solar system, would almost lead us to believe that variety alone, distinct from every other consideration, was the motive and aim in the mind of the Creator, or with the agents of His will. The dissecting-room, the microscope and the laboratory but partially reveals to us the *arcana* of nature; but the science of astronomy, beyond all others, displays to us the splendor and the magnificence of His operations. Through this the mind rises to sublimer views of the Deity, though we cannot familiarize with the minor details in this department of His works.

There are a few observations on the vegetable kingdom that it will be our aim to notice. One great object of nature, in the structure of plants, is the perfecting of the seed, and its preservation until perfected. This intention shows itself, in the first place, by the care which seems to be taken to protect and ripen by every advantage that can be given them by situation *in* the plant, those parts which most immediately contribute to fructification, viz.: the anthers, the stamina, the stigma. These parts are usually lodged in the center, the recesses or the labyrinths of the flower during their tender and immature state; are shut up in the stalk or in the sheltering bud; but as soon as they have acquired firmness of texture sufficient to bear exposure, and are ready to perform the important office which is assigned them, they are disclosed to the light and air by the bursting of the stem, or the expansion of the petals; after which they have, in many cases, by the very form of the flower during its bloom, the light and warmth reflected on them from the concave side of the cup.

What is called also the sleep of plants, is the leaves or petals disposing themselves in such a manner as to shelter the stem, buds, or fruit. They turn up or fall down, according as this purpose renders either change of position necessary. In the growth of grain, whenever the plant begins to shoot, the two upper leaves join together and embrace the head, and protect it till the pulp has acquired a certain degree of consistency. In some water plants the flowering and fecundation are carried on with the stem, which afterward opens and loosens the impregnated seed. The pea tribe incloses the parts of fructification within a beautiful folding of the internal blossom, itself protected under a pent-house formed by the external petals. This structure is very artificial, and it adds to the value of it, though it may diminish the curiosity; it is very general. It has this further advantage, which is strictly mechanical, that all the blossoms turn their backs to the wind whenever it blows strong enough to endanger the delicate parts on which its seeds depend. It is an aptitude which results from the figure of the flower, and, as before remarked, strictly mechanical—as much so as the folding of the fans of the windmill, or the cap on the top of a chimney. The poppy and many similar flowers, the head, while it is growing, hangs down, a rigid curvature in the upper part of the stem giving it that position, and in

that position it is impenetrable by rain or moisture. When the head has acquired its size and is ready to open, the stalk erects itself for the purpose of presenting the flower and the instruments of fertilization to the genial influence of the sun's rays. This is a curious property provided for in the constitution of the plant; for if the stem be only bent by the weight of the head, how comes it to straighten itself when it is the heaviest? These instances show the attention of nature to this principal object, viz.: the safety and maturation of the parts upon which the seed depends. In trees, especially in those which are natives of colder climates, this point is taken up earlier. Many trees produce the embryo of their leaves and flowers in one year, and mature them the following year. There is a winter also to be got over. Now, what we are to remark is, how nature has prepared for the trials and severities of that season. These tender embryos are wrapped up with a compactness no art can imitate, in which state they compose what we call the bud. The bud itself is inclosed in scales, the remains of past leaves or the rudiments of future ones.

In the coldest climates a third preservative is added, by the bud having a coat of gum or resin, which, being congealed, resists moisture and frosts. On the approach of warm weather this gum is softened, and ceases to be a hindrance to the expansion of the leaves and flowers. The leaves themselves are packed in capsules or in vessels composed of coats, which, compared with the rest of the flower, are strong and tough. From this vessel projects a tube through which the fertilizing properties that issue from it are admitted into the seed.

Here occurs a mechanical variety accommodated to the different circumstances under which the same purpose is to be accomplished. In flowers which are erect, the pistils are shorter than the stamens, and the pollen shed from the anthera into the cup of the flower is caught, in its descent, on the head of the pistils called stigma. In flowers that hang down or suspended (the crown imperial, etc.), this arrangement is reversed, the pistils being usually the longest, and its protruding summit receives the pollen as it falls to the ground.

The seed vessels are of an incalculable variety of forms in different plants, all evidently conducing to the same end, namely, the security of the seed. Of the gourd, melon, etc., the seed vessels assume an immense bulk; in stone fruits and nuts, incased in a strong shell, the shell itself incased in a pulp or husk; in numerous kinds of berries, in grapes, oranges, etc., the seed is inclosed in a glutinous syrup contained in a skin or bladder; in apples, pears, etc., imbedded in the heart of a firm, fleshy substance; or, as in strawberries, pricked into the surface of a soft pulp. These, and many other varieties exist in what we call fruits. In grain, in grasses, trees, shrubs and flowers the variety of seed vessels is incomputable. We have the seeds, as in the pea tribe, regularly disposed in parchment pods, which, though soft and membranous, are impervious to water; at other times, as in the bean, lined with a fine down. We have seeds packed in wool, as in the cottonwood, lodged between hard and compact scales; as in pine cones, protected by spines; as in the thistle, placed under a pent-house; as in the mushroom, in ferns, in slits on the back of the leaves; or as in grains and grasses covered by strong, close tunics attached to a stem, according to an order appropriated to each species of plant.

Care of Young Fruit Trees.

BY WILLIAM H. YEOMANS, COLUMBIA, CT.

ED. WESTERN HORTICULTURIST:—The great complaint of want of success in the cultivation of fruit trees, can in a great majority of cases be attributed to a lack of proper care. Not only after they are set, but at the time of setting; there is no doubt but that a tree may be so set as to disastrously affect the whole of its future growth; in fact the very life of the tree depends upon its setting. It is related, that a man having purchased one hundred apple trees, set a man at work setting the same, and having labored all day, reported having set ten trees. This so provoked the proprietor, that the man was discharged, and the next day another set to work. At night this man reported the remaining ninety trees all set. Now for the result. Of the one hundred trees set, every one of the ninety, set on the second day by the *rapid* workman died, while the ten set by the careful workman, every one lived. This case is undoubtedly very similar to many others, and ought to furnish a striking lesson of the necessity of all reasonable care. If the excavation is made of good size, the soil left loose and convex, to conform to the concave form of the roots, and the fine loose soil properly deposited upon the roots, and then compacted so as to be firm about them, it is believed that the tree will be almost sure of life, and upon the future care which it receives, depends its successful growth and fruitage. In an apple orchard there should be cultivation of the soil for at least eight or ten continuous years. While an orchard may be set in greensward and make a successful struggle for existence, and in process of time may come to bearing, the trees ever present a stunted appearance which time never overcomes. Such an orchard, however, by proper mulching, which serves a double purpose of cultivation and fertilizing, may be carried on so as to present a good appearance. But in the growth of trees, the main object is to obtain a good healthy body and head, which can be accomplished in no way better than by general cultivation of such crops as will afford least obstacle to the growth of the trees. It is far better, too, to remember the old maxim that, "just as the twig is bent, the tree is inclined," and so let the pruning be carefully and judiciously made, for the reason that it can be done with far less injury to the tree, and also the top of the tree more properly shaped. There is no doubt but that it is much better to train the trees with the tops as near the ground as possible, for the ease of picking the fruit. It is also questionable, whether it is not better to so arrange the trees by varieties, at such distances apart, that when arrived at full growth, they shall come very nearly together in their branches. This will very much affect vegetation, tending to keep the soil loose and moist as well as serving as a protection against winds, which otherwise would cause the fruit to fall. This, however, may be obviated by setting the trees at a greater distance apart, and planting alternate rows of evergreens. There is no doubt of the very great benefits of pursuing such a course. In every case, however, whatever system be pursued, let proper care be exercised.

Peculiar Winters.

BY WILLIAM P. LIPPINCOTT, VERNON, VAN BUREN CO., IOWA.

ED. WESTERN HORTICULTURIST:—This stanch old ship (the earth) has had an unusually hard time in doubling her Cape Horn (the perihelion point) this winter. Nearly all the time since the middle of November we have had unusually severe winter weather, the mercury getting down as low as 29° below zero here on the high prairie, and 36° below along the river. On the 19th ult., mercury about zero, ten miles from here, a house was struck with lightning, scattering the hot stove and its pipe about the room, and tearing up the floor. The discharge came from a small cloud passing over the house. Here, on the 29th ult., mercury 12° above zero, a clap of thunder issued from a small passing cloud. About the same time a church was destroyed by lightning in Mahaska county. Besides these unusual occurrences in cold winter weather, Iowa has never before had so much sickness; more than half of the people in these parts have been sick.

It is plain to an observer, that this winter in nearly all its vicissitudes, is different from any other winter that we know anything about. Can it be that we have been sweeping through the tail of a comet? Or, has the earth been attracted a little out of its orbit, when near the winter solstice, by some passing body? At this date, she is most likely in the old path, and speeding on to the vernal equinox, only a little beyond which, in our latitude, lies the green fields and flowery meadows, so heavenly-like, and so well calculated to gladden the hearts of all animated beings.

Perhaps you remember the winter of 1842-43. During the months of February and March the cold was excessive. In the evenings of these two months, during twilight, and in the direction of where the sun sets, there was to be seen a cone-shaped light, differing from the twilight, extending about one quarter way to the zenith, and about half as broad at the base. This was a great wonder to people of these parts. Many were the conjectures what it could be. Some thought it was a comet's tail, others thought it was the zodiacal light. The ignorant and superstitious supposed it was a token of some great calamity approaching. It was probably the zodiacal light, but what made it so conspicuous at that particular time, when it can scarcely be seen at all since then? Of course it was the altered condition of the earth's atmosphere, but what made that, we cannot know.

On the 7th of April, of the year under consideration, the Des Moines river was still solidly frozen over, affording good teaming up and down, and across the river, which was much used, as roads were scarce and poor at that early day. When spring came, it was wet and lingering. Corn was planted late, scarcely any getting ripe. Wheat was a tolerable crop, grass was excellent, and prairie flowers as abundant and beautiful as at any previous time.



PLUMB'S CIDER APPLE.—After no little research for some months past, we have at length obtained a single specimen of this apple, and from a source, we suppose, that leaves no question of its being a true specimen of the apple called *Plumb's Cider*. We had prepared a truthful illustration of the fruit, with our impressions for the current number, but to give place to other matter longer on file, feel constrained to lay it over for another month; we can scarcely avoid, however, at this time, an expression of surprise over the long and persistent controversy had concerning the identity of this apple with *Smith's Cider*.

Meeting of the Minnesota Horticultural Society.

ED. WESTERN HORTICULTURIST:—The annual meeting of the Minnesota State Horticultural Society, was held in St. Paul, January 14th to 17th, and the following named gentlemen were elected officers for the ensuing year, viz.:

President—Truman M. Smith, St. Paul.

Vice-Presidents—Levi Nutting, Faribault; E. H. S. Dart, Owatonna; T. Ramsdale, Ramsey county. *Secretary*—John S. Harris, La Crescent. *Treasurer*—Wyman Elliot, Minneapolis.

Written reports were received from nearly every county in the State, showing that our people are awake and deeply interested in the advancement of horticulture. These reports show very encouraging results from the last three or four years' experience. After the reception of the reports, a list of apples was unanimously adopted for general cultivation, comprising the following varieties:

Tetofsky, Duchess of Oldenburg, Fameuse, Haas, Plumb's Cider, and Ben Davis. Also, a second list, for general trial:

Red Astrachan, St. Lawrence, Saxton, Price's Sweet, Tallman Sweet, Golden Russet, and Little Red Romanite.

Pears, grapes, strawberries, and other small fruits, also received due attention. Some time was spent in discussing the merits of various flowering, ornamental plants and shrubs, and a list adopted and recommended for general cultivation. Evergreens were quite freely discussed. The Norway Spruce, Austrian Pine, Scotch Pine, Balsam Fir, Arbor Vite, Black and White Spruce, and Red Cedar, were voted hardy in all sections of the State, and recommended for general planting. A great many good things were said and done, and all returned home pleased with what had been done in the past, and with renewed hope for the future progress of horticulture in our State.

JOHN S. HARRIS, *Secretary.*

Apples from Arkansas.

MR. N. B. PEARCE, Osage Mills, Ark., sends to *Colman's Rural World* several specimens of apples named, upon which he remarks:

"The Schoolfield, Royal Red and Thurman were brought to Benton county by my wife's grandfather, John Spring, many years ago, from Sequache valley, in east Tennessee. The Schoolfield and Thurman were so named by him, having procured the grafts from orchards owned by Schoolfield and Thurman. The Royal Red he named. The Kentucky Red was taken by Col. Anderson from Kentucky to Alabama, and from Alabama he brought them to Benton county some thirty odd years ago, and he named them Kentucky Red, and as such they are known throughout Arkansas and Texas. The most popular we have and so well known by the name given it by Col. Anderson that it will be hard to correct it, if it should prove to be, as you suppose, the Rome Beauty. Some call it New York Pippin. You will confer a favor by letting us hear from you through the *Rural* on these fine apples."

REPLY.—We took your apples to the Missouri State Horticultural Society, at its annual meeting, at Jefferson City. The variety you call the Kentucky Red we know to be the Ben Davis, but the other varieties we could not identify. No one at the meeting could identify the Royal Red or the Schoolfield. Several pronounced the Thurman to be the Ben Davis also. It resembles it much in many respects, but we think it is not.



Floral Notes.

Fumigation for Plants.

Mr. J. C. Niven, of the Hull Botanical Garden, recommends tobacco fumigation (in London *Garden*) for cleaning green flies from certain house plants infested by them. His plan is to lay the plant on its side in a washtub, throw over it a damp towel, or better, "a bit of glazed calico lining," and then, through an opening at the bottom, have "your husband" insert the end of a pipe, and through it let him blow tobacco smoke until the plant gets a good fumigation. The flies will be found at the bottom of the tub when the operation is finished. The plants should be perfectly dry when the operation is performed, but if a towel is used it should be freshly washed and wrung out before using, and be without holes. The pipe stem should reach to the bottom of the tub. As to the husband, if the owner of the plants hasn't got one, a substitute will answer—the point being to effect the fumigation thoroughly.

Funeral Flowers, in New York.

In all our larger cities flowers form a large source of revenue to florists who make bouquets, etc., a specialty. In New York, the aggregate sum spent yearly on flowers is immense. Upon funeral flowers, especially, large sums are expended. The following will show the prices paid for leading sorts in winter: The price of a handsome basket is from five to fifty dollars. Bouquets can be made at from three to twenty-five dollars. Single rosebuds cost twenty-five cents, and carnations twenty cents. Smilax is sold at one dollar a yard, and violets by the dozen at twelve cents. One spray of lilies of the valley costs twenty-five cents.

Verbenas.

It may not be generally known to flower growers that this charming flower can be grown so as to produce flowers from seed the first year, but such is the case. Procure of a reliable seedsman seed saved from the choicest flowers, and sow them any time during March, either in a well prepared hot-bed, or in a box of rich, fine soil, to be kept in the house nights, and cold days; water with warm water as often as dry, and transplant into the garden early in June. If the plants should grow rapidly, they should be transplanted, at least once in the hot-bed or boxes, so as to make them grow stronger, and keep the roots more compact. Plants properly grown in this way will produce larger, and healthier flowers than those propagated in the greenhouse, from cuttings, although they will not be of any particular variety.—*Am. Rural Home.*

Care of Calla Lilies.

A friend, whose lilies are the wonder and admiration of the village, writes *The Laws of Life* as follows:

"I keep my lilies growing all summer, set out on the ground near my dining-room door, in somewhat shady places, because I think them such fine plants to look at. I

have not repotted mine for five years, but every spring and autumn I dig out some soil and put in new, mostly the black, soft, velvety muck that abounds in our swamps. Let from four to six bulbs live in the same large pot. I used to think only one bulb of either Calla or Amaryllis must occupy a pot. From each bulb I have four flowers in a season, and sometimes more, and treated in this way, my Callas have been in bud and blossom ten months of the year, or from September to July inclusive. When I repot Amaryllis, to get bulbs to give to my friends, I often lose a season's flowering. One that I disturbed last summer has missed its autumn flowering, and the other, not disturbed, has given me four stalks of gorgeous, lily-like flowers."

Sickly Plants.

For sickly plants the best way is to turn them out of the pots, shake or wash off all the soil from the roots, and, if any are decayed cut them off; also prune the stems and branches severely and pot again in fresh soil. Set them away in a shady place after giving water sufficient to settle the soil, adding a little from time to time as returning health and growth appears.

The Earliest Peas.

Dr. Hogg reports, in the *Journal of the Royal Horticultural Society*, experiments with different varieties of peas:

- Carter's First Crop*.—Sown February 23. Fit for use June 9.
- Daniel O'Rourke*.—Sown February 23. Fit for use June 12.
- Early Emperor*.—Sown February 23. Fit for use June 19.
- Tom Thumb*.—Sown February 23. Fit for use June 17.

Flower Garden Hints.

So many people say that their flowers, which once did well, do not thrive any more; and the reason is incomprehensible to them. In many cases the trouble is from worn-out soil; and if a little manure, or a little fresh dirt, be added occasionally, it is wonderful what an effect it will have on the renewed growth of half worn-out root stocks. Some kinds of flowers soon grow surly and bad-tempered, unless they have a complete change of earth once in a while. The verbena is of this character. In perfectly fresh soil—that is, earth which has never grown a verbena before—it grows like a weed; but the next year it is not quite so well, and in a few years it absolutely refuses to creep, run or do anything; and we are forced to confess that the verbena won't do for us as it used to years ago.

Other flowers are not so stubbornly fastidious as the verbena; but still all more or less like to feel rejuvenated by an addition of some kind occasionally to the earth-blessings they have already been treated to. Almost all our best hardy flowers are natives of woods or low, undisturbed lands, where the decaying leaves from the trees, or the washings of higher surface lands, make a new annual entertainment for them; and it has been found by experiment that nothing is so good for these pretty little flowers as well-decayed leaf-mould from the woods, spread around the root stocks just above the ground. But where this cannot be had, any other well-decayed vegetable refuse that may be "laying around loose," will do very nearly as well. Strong, rich manure—barn-yard manure—has not been found very good for garden flowers. It makes the herbage too strong, and the flowers less in proportion. But if nothing more natural can be got at to help the flowers along, and the soil seems exhausted and poor, this will be found much better than leaving the plants to struggle along as best they can. This is the time of the year to think of these things.—*Ex.*

Retired Flowers.

How beautiful are retired flowers! How would they lose their beauty were they to throng into the highway, crying out, "Admire me, I am a violet!" "Dote upon me, I am a primrose!"—*Keats.*

The Pests of Rosebushes.

These are abundant enough, as every one who has tried to cultivate roses knows, unless the experiment has been made in some region exceptionally free from the ills to which these shrubs are heir. Bugs and worms, and flies, too, often cover the bushes, and it is impossible to give infallible directions for their extermination. One cultivator uses carbolic soap with success, while another does better with whale oil soap, and still another accomplishes wonders with tobacco smoke. All the dealers in seeds and horticultural supplies keep the soap and the oil on hand, and tobacco can be had in large quantities at a cheap rate. Perhaps as effectual a method as any is found in the combination of tobacco smoke with either of the other two agents, the washing being done either before or after the smoking. Now, the smoking, although it is very easy to talk about, has its drawbacks. If, however, it must be done, it is well to do it effectually.

We have seen a device which, so far as the production of smoke goes, is very satisfactory. A common tin box, such as dry mustard is sold in, is taken to the tinman, who cuts a hole about half an inch across in the bottom, and solders on a tapering tube, something like the nozzle of an oil can. In the cover of the box he cuts another hole, and solders on a tube flaring slightly outward, of a size to fit over the nozzle of a pair of bellows. The whole machine looks like one of the affairs which dealers in magic cockroach powders sell for the purpose of blowing the powder into cracks and crannies. The box is filled with tobacco, and a live coal inserted just under the cover. The tube is then placed on the bellows, and the latter put in operation. The result will be a smoke such as no respectable insect will endure for a moment.

It is quite practicable to smoke plants, both in-doors and out, by using a light frame covered with glazed cloth, or other reasonably smoke-proof material. This is made large enough to put bodily over the bush. The nozzle of the smoke bellows may then be introduced through a suitable aperture, and in a few minutes, or seconds, the smoke inside will be almost thick enough to cut with a knife.—*Ex.*

A New Libonia.

One of the most valuable plants for greenhouse decoration is the *Libonia floribunda*, which was introduced only a few years ago. It is a small, half-shrubby plant, which, on account of its abundant and persistent flowering all winter, is especially useful in the cool greenhouse, or under certain circumstances as a window-plant. We have recently received from Mr. John Saul, of Washington, another *Libonia*, which appears to be an improvement on the older one. It has better foliage, and much larger, brighter, and deeper colored flowers than the other, and is, on these accounts, preferable to it. This new *Libonia* is called *L. Penrhosiensis*. It is said to be a cross between *L. floribunda* and *Sericographis Ghiesbregtiana*, a statement we do not credit, as the difference between it and *L. floribunda* is no greater than often happens with seedlings. Whatever may be its origin, it is an exceedingly bright and pretty plant. The flowers are vermillion red at the base, shading into yellow at the upper part. The *Libonias* are not suited for cut-flowers, as the blossoms drop very readily. If grown as a window-plant, it should be commenced with in the fall, and brought into flower in the window, as plants taken from a greenhouse into the dry air of a dwelling lose both flowers and leaves, and become unsightly.—*Hearth and Home.*

Sowing Flower Seeds.

We have often, in the spring, heard the cry, "Why don't my flower-plants come up? The seeds are of no account. The seed man has cheated me," etc., etc. We generally listen to such complaints with as much grace as we have, knowing all the time that the fault is generally, not in the seed, or the seed man, but in the would-be cultivator. The principal reasons, "why the seed will not come up" are:

First—The ground is not of the right kind, or has not been properly prepared.

Second—There is not warmth enough to cause the seed to sprout.

Third—The seeds were planted too deep.

But very often the seeds sprout, and yet the little plants fail to grow and mature. The following are the reasons:

The ground, as before, is not of the right kind, or is lumpy, or otherwise in poor condition.

The ground dries and bakes in the sun, whereby the delicate plants are dried up and destroyed.

The plants, if covered with glass, are permitted to get too hot, and are burned up.

To avoid these difficulties, see to it, in the first place, that the soil is suitable, and in proper condition. Select a rich mellow loam, sandy enough to keep from baking. Thoroughly rotted chip manure, mixed with earth and fine sand, or old earthy stable manure, with sand or ashes, or loamy earth from the woods mixed, if necessary, with sand or ashes, will generally answer the purpose. Whatever ingredients are used, recollect that the soil must be rich, mellow and non-baking in the sun.

Having this sort of soil, see next that it is without lumps, chips, or gravel. It will be best to pass it through sieve, especially the part that is to form the upper part of the bed. A common corn-meal sieve will answer the purpose. In covering small seed it will be well to sift the soil over them through a hair or thin cloth sieve.

Seed-Bed.—If no hot-bed or cold-frame is to be used, let the seed-bed be made (out of the soil selected, or prepared as above) in some situation in the garden, sheltered from the cold winds, and having a southern exposure. Then, as soon as the ground becomes warm, say early in April, sow the seed on the surface and cover them with a little fine earth. If the seed be small the earth ought to be sifted upon them. Be careful not to cover the seed too deep. As good a rule perhaps as can be suggested is to cover them about twice the depth of their own thickness.

Do not permit the soil to become too dry. Should the weather be dry after sowing, cover the small seeds with a thin layer of moss, or better, with cedar twigs, or with boards elevated so as to be a few inches above the bed. This partial protection will prevent, in a measure, the drying action of the wind and sun. Recollect, however, that as soon as the plants appear above the soil, the covering must be removed. The soil must be kept damp, but not too wet. Sprinkle the bed at or after sundown. The bed should be raised enough to allow of good drainage.

If the plants are too thick when they come up, it will be best to thin them out. In sowing, let them be thrown evenly and thinly. They are to be transplanted when they have obtained their second leaves and are an inch or two long. The seed-bed is intended to be a help in the cultivation of tender flower-plants. The more hardy kinds can be sowed where they are to grow. Some persons sprout choice seed in a shallow box containing suitable earth, and kept in the house window. The seed-bed in the garden, it must be recollected, will require especial attention, should the nights happen to be frosty.—*Rural Sun.*

Begonias.

This class of plants is better suited for house culture than those more commonly selected. Succulent plants delight in a hot, dry atmosphere. The bloom of the Begonia Magnifica is most beautiful and constant—the petals resemble frosted glass; it has a very delicate, spicy perfume. I have had a specimen in bloom since the first of October. The flower closes at sunset. It requires plenty of water while blooming.—*Am. Farmer.*

Watering Plants.

It is an injury to frequently water plants on the surface soil. Reflection will convince any one that a pot full of soil cannot receive sufficient water to thoroughly wet the roots. It is time saved, once a week, to place the plants in a deep vessel of water, keep in the water until the air bubbles cease; also sponge over and under the foliage. It will keep the plants healthy.—*Am. Farmer.*

Horticultural Notes.

Growing Forest Trees.

R. S. Elliott, the great Kansas tree planter, gives the following directions for starting certain forest trees:

The *white ash* can be grown from seed planted in drills, and then cultivated, thinning out by cutting or transplanting. Plant the seed either in spring or fall. If kept over, it should be wintered in sand and slightly dampened.

The *cottonwood*, for large quantities, is best grown from cuttings. Cut in one foot lengths, and bury in moist, but not wet earth, and set out in the spring.

The *Honey locust*: Keep the pods till spring, in a dry and cool place, if not convenient to plant in the fall. If planted in spring, the seeds must be immersed in warm water, to soften the horny shell. If planted in the fall this is not necessary; but some may not grow till the second year.

Basswood or *linden* seed can be sown when ripe, or kept in damp sand till spring, most of which will germinate the first season. The seedlings can be readily transplanted.

Destroying Weeds on Lawns.

W. Nichol, in the *Cottage Gardener*, speaks highly of the use of oil of vitriol for eradicating plantain and other weeds on garden lawns, having applied it successfully for several years. He says: "We use a small narrow-necked glass bottle, such as is used by chemists in laboratories, etc. One may be purchased at any chemist's at a very trifling cost. If the glass stopper in the side be kept firmly in its place, the liquor will only come out in drops, and therefore the operator is not so likely to waste the acid or throw it over his clothes, as would otherwise be the case. If the acid can be procured pure, it may be considerably diluted with water, in some cases quite one-half, and it will still be sufficiently strong for all weed-killing purposes."

Cucumbers on Trellises.

The *Gardener's Monthly* says no one who has not tried it, can have any idea of the luxurious growth of a cucumber, when trained on a stake, which has a set of stubby side-branches left along its length; and the crop on some the writer saw so trained was enormous. By this plan the vines occupy less ground, and it is the natural habit of the cucumber to climb instead of trailing on the ground. This is a hint worth remembering, especially by those who have small gardens.

Fertilizers for the Lawn.

F. R. Elliott recommends in the Cleveland *Herald* the following fertilizers: Bone meal is the only one that can give off a bad odor, and if that could be sown upon a light snow, or just before a rain, the ammonia would probably be washed into the ground before much would pass into the air.

"We are aware that it is a long old time practice to dress the lawn in autumn with coarse manure, and so make the whole foreground of a gentleman's place the apparent receptacle of his stable yard for the winter, but, thanks to our American ideas of propriety, and our knowledge of assimilation of plant food, we now measurably ignore the dogmas of old country gardeners and use specifics, *i. e.*, just now we apply salt at the rate of four bushels to eight bushels per acre, bone meal in same quantity, and plaster one-fourth. The sooner these manurial agents, all except the plaster, are now applied, the better, unless it be upon a lay of land so sloping that the coming rains, with melting of snow and ice, will cause the commingling or detrition of the manures to wash away with the falling water. In such locations we should not apply our specifics as above named, until the snow and ice are gone, but then we would make no delay. The application of the plaster, *i. e.*, its sowing, should be just after the grass has made an inch or more of growth."

New Variety of Mulberry.

A new variety of mulberry is mentioned by French journals as having originated in Hungary, with the long and unpronounceable name, *Morus alba Fegyvernekiana*. The tree itself, however, is not much longer than its name, for it only grows to a height of six feet, and is said to be a dwarf of remarkable beauty.

Madeira Nuts in California.

The walnut (*Juglans Regia*) crop is quite an item in Los Angeles county, California, where more attention has been bestowed upon the propagation of the walnut than in any other part of the State. Fifty thousand pounds of this year's crop have been sold at ten cents per pound.

Prize for Insects.

The Royal Horticultural Society (England), offers a prize of \$50 for a collection of British insects injurious to some one order of plant used for food, such as *crucifarae* (cabbage tribe), or the *leguminosae* (bean tribe), etc.—the collector to be at liberty to select such tribe of plants as he chooses. The insects to be exhibited in their various stages of development, accompanied by specimens, models, or drawings of the injuries caused by them.

An Insect Show.

Paris is also to have an "Insect Show" this month at the Luxembourg. The exhibition will contain noxious and useful *insectivora*, will show the productions of the latter, and specimens of the ravages caused by the former. Among the "usefuls" is a little black fly, myriads of which appeared a few months ago to the great annoyance of the citizen. It would seem that this fly fed upon those infinitesimal insects that infest wall fruit, as well as those which do such injury to corn.

Cabbages.

Although long lists of different sorts are quoted in seedsmen's catalogues, yet but few of them are suited to the wants of the farm gardener. With good seed of any of the following, he will have excellent cabbages:

Bergen Drumhead.—A large sort, and the best keeper of any. Heads very large, round and tinged with purple; short stalk. The best of the Drumheads, but needs to be set out earlier than the following:

Flat Dutch.—Another large sort, with very broad flat heads, and of a light green color. For fall and early winter use it is a very good sort, but with me has been a poor keeper.

Stone Mason.—A solid but not large head, in fact rather small for market, but of excellent quality and a fair keeper. Their size is unimportant; it is always in good demand. It is excellent for late or delayed planting, as it matures quickly.

Drumhead Savoy.—For table the best of all, but the public does not yet know it, and only a small number should be grown. A few freezings only make it the more tender and sweet. An excellent keeper.

Red Dutch.—This should be planted at least two weeks before even the Bergen Drumhead, and upon richer soil. There is a limited call for it for pickling, and at the restaurants and oyster saloons.—*Prairie Farmer*.

Fruit Packing in New Jersey.

The New Jersey *Farmer* says the packing houses of Brighton, N. J., three in number, have put up about 1,500,000 cans of fruit and vegetables this season, paying out as high as \$6,000 per week for labor. It also says that this year tomatoes have paid the grower from \$75 to \$125 per acre; Lima beans, \$70 to \$100; peas \$50 to \$100. Strawberries paid from \$100 to \$200, and in some cases high as \$400, but this was rare.

The Eumelan Grape.

Peter M. Gideon, of Minn., writes to the *Prairie Farmer* that, in his opinion, the Eumelan is the best of the black grapes, and we quote his remarks, which seem to us justifiably enthusiastic:

" Of all black grapes that I have seen or tasted, the Eumelan is the earliest, best table grape, splendid in bunch and berry, very saleable, first in market; a prodigious bearer, always ripe before early frosts; strong grower, hardy vine, ripening more wood than any other vine we had, notwithstanding it yielded double the fruit of any other vine of its size, the yield being some seventy-five pounds. Every bunch ripened evenly, though only ten feet of space on trellis, whilst two Concords, same age, each nearly as large (thirty feet on trellis), yielded only about twenty pounds, same soil and culture, less in bunch, and not so good in quality. Evidently the Eumelan is the grape for the North. Safe in all seasons, and no dropping of berries if left out as long as any grape dare be left out of doors. But as to its wine qualities, I can't say; don't care. I grow grapes only for the joy and comfort of home.

If short of space, the Eumelan is the grape. It gives the greatest yield, is sure to ripen, and is the most luscious of all black grapes we have yet seen. But, if there is space, and a variety is wanted, then for quality, and a sure crop, early to ripen, the Croton has no superior among the white grapes, so far as we have tested. And of the red grapes, the Iona is our best, though not so early as either of the preceding, and requires a southern exposure, well sheltered from cold winds, a good warm soil, with clay, or, better, clay and gravel, to insure well ripened fruit every year. But when well ripened, as they ripen on our grounds, they are truly luscious, keeping well into winter, in a common room, on shelves or in baskets, gradually drying into good raisins, without the addition of sugar."

Remedy for the Striped Bug.

Some weeks ago I saw, in the *Farmer*, a recommendation of the use of ground or calcined plaster as a remedy for striped bugs. My own experience allows me to tell you how I have improved on that remedy. Having occasion to use Paris green and calcined plaster, in proportion of one of the former to fifteen of the latter, as a destroyer of the potato bug, I tried the stuff on squash, melon and cucumber vines; with me, the mixture dusted on from a common dredging box, has proved equally effectual against the Colorado potato beetle and the striped bug. On squashes of the tenderest variety of foliage, like the Hubbard, for instance, and on the hardier, like Cymlin and the winter Crookneck, this mixture, put on while the plant is wet or dry, does not injure them; and so of musk melons and cucumbers. The water melon, however, does not bear such treatment, and I recommend that the mixture be used with care. I give my experience in this business—limited as it is—because I know with what extreme difficulty cucumber and other vines are protected from the striped bug.—*Cor. of Prairie Farmer.*

To Make Grafting Wax.

Grafting wax is useful in pruning to cover wounds, and hence it is useful to have on hand, even when not expecting to graft. The proportions of ingredients (tallow, beeswax and rosin), are one, two and four in the order named, though the *London Garden* says that when beeswax is very expensive one-third less will do. Stir well when made, and keep in a cool place. We will add—to keep it from sticking to the hands and fingers when mixing or applying it, keep them well greased; if you do not, it will stick closer than a brother.

Small Evergreens.

We are very frequently asked the question, as to when is the best time to plant small evergreens? our answer is, any time when the ground is in a mellow, free condition (except the months of July and August, as being too hot), at all the other seasons we would plant subject to the above considerations; yet there are seasons and conditions when success may be deemed more certain, and these are—first, if the soil is light and dry, in Maryland and Virginia the months of March and April would be

the best ; second, if your land is heavy and wet, then we would select May and June ; for ourselves we plant most of ours in the latter month. The many failures in the planting of evergreens does not depend so much on the time in which it is done, as the manner in which it is performed, for it is no unusual thing to see a tree three to four feet high, have its roots (that have been dried by the wind and scorched by the sun), stuck into a hole not larger or deeper than a gentleman's dress hat, whereas it ought to have a hole provided for its roots from three to four feet wide. There is another practice among planters, that is, in planting everything too deep in the ground. Old mother nature never gives herself up to such follies as we see perpetrated by men, who are deemed sensible in other matters ; our advice, therefore, is, to keep the roots near the surface, or not deeper than they stood in the nursery rows or their native wilds.—*Am. Farmer.*

Editorial Notices.

Handsome Catalogue.

Washburn & Co. have issued a very handsome Catalogue this year. The engraved title page, and the colored plate of flowers, inside, are in excellent taste. The plate is much the best issued, this year, from any eastern seed house.

Bone Fertilizers.

We may be pardoned for referring to this topic. We have used Lister's *Bone Meal* and other fertilizers for six years, and will *not use any other*. We not only believe them to be the purest of any in the market, but the firm are of such acknowledged reliability and honesty in transactions that they deserve wider publicity. To gardeners and fruit growers, who have to use the various preparations of bone for their trees and vines, we can recommend cheerfully the above firm.

Publications Received.

California, by Marshall P. Wilder—Mr. Wilder's Lecture republished by request.

O. S. Wildey—Woodward & Co., Madison, Wis.—Catalogue Fruit and Ornamental Trees.

Storrs, Harrison & Co., Painesville, O.—Wholesale Trade List ; Spring Catalogue of New Plants.

Dick Radclyffe & Co., London, England—Spring Catalogue Seeds.

D. C. Benton, Quincy, Ill.—Wholesale Price List, 1873.

J. W. Adams, Springfield, Mass.—Trade List Nursery Stock.

L. D. Payne, Kasota, Minn.—Circular of Paper Berry Baskets.

Miller & Hayes, Germantown, Pa.—Rose Catalogue ; Catalogue of Plants, 1873.

P. J. Berkman, Augusta, Ga.—Catalogue of Plants, 1873.

Robert Veitch, New Haven, Ct.—Catalogue of Bedding Plants, 1873.

Ellwanger & Barry, Rochester, N. Y.—Select List New Rose Trees ; Descriptive Catalogue of Plants ; Descriptive Catalogue of Fruits ; Wholesale Nursery Catalogue.

Dingee & Conard Co., West Grove, Pa.—Rose Catalogue.

Transactions Nebraska State Horticultural Society, 1871.

John Saul, Washington, D. C.—Catalogue of New Plants, 1873.

Wm. F. Porter, Warren O.—Catalogue of New and Rare Plants, 1873.

H. Cannell's Illustrated Floral Guide, Woolwich, England.

E. G. Henderson & Son, London, England—Catalogue Seeds.

Nicholas Cole, Pella, Iowa—Seed Grower's Catalogue.

Beach, Son & Co., Brooklyn, N. Y.—The Flower Garden.

D. M. Ferry & Co., Detroit, Mich.—Catalogue of Seeds.

Olin Bros., Newark, N. J.—Floricultural Gardens.

J. Cochrane, Havana, Ills.—Catalogue of Plants.

Washburn & Co., Boston, Mass.—Amateur Cultivator's Guide, 1873.

FLORAL AVENUE AT PUTTERIDGEBURY, ENGLAND.



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Subtropical Gardening.

BY JAMES TAPLIN, SOUTH AMBOY, N. J.

MUCH has been written on this subject in Europe, and many plants tried for the purpose, with more or less success, which in a great measure depends on the season, which is proverbially uncertain, especially in England; but enough success has attended the trial of many fine foliaged plants previously generally grown in hothouses all the year, to vary the uniformity and monotony of large masses of flowering plants.

In this country, many hothouse plants are far more satisfactory in the open ground than under glass during the hot summer months, and grow with a vigor and rapidity unknown in the cold, dull climate of England. But here comparatively little advantage has been taken of those advantages; and the effort has been used in trying to have such plants as variegated geraniums make an equal display to those seen in English gardens. This I consider a mistake, the climate being so very different; that a real satisfactory flower-bed to last in full beauty for, say, three months would be seldom seen. With few exceptions, the extent of subtropical gardening here has been a few large masses of Coleus Verschaffeltii, the poorest varieties of Cannas and Caladium Esseulentum; these are very well as a beginning, but variety is charming, and having such a large variety to choose from, we should make use of many others, which might be planted in large quantities in the splendid public parks without destroying the natural scenery, but rather adding the luxurious growth of the tropics to the tropical climate.

Some of your readers may make an objection to the expense of this style of gardening; but, after the first outlay, it is in reality less than keeping up a supply of flowering plants; and where large quantities are required to be stored, the space

required in comparison to the size of plants is small, and many species can be stored better in a dry cellar just free from frost than in a greenhouse.

I will mention a few of the most showy and easily grown plants, such as may be termed everybody's plants.

First, I must place Cannas, of which we have now varieties with very handsome foliage and also large and very showy flowers. Some of the varieties, as *Heliconia* and *Auguste Ferrier*, will grow eight or more feet high, with large musei-like foliage, while *Adele Levalloie* will display its dazzling crimson flowers when but two feet high, while *Tricolor* gives us beautiful variegated foliage. These plants will grow in any rich soil in full sun or shade, but much better in former, and can be stored like potatoes in the winter.

Another fine plant is the *Aralia Papyrifera*. Its large palmata leaves are very striking. This grows as free as the *Caula* in rich soil, and may be laid by the roots in soil in the cellar, and planted out again in May.

The *Phormium Tenax*, or New Zealand Flax, is another very useful plant; also the beautiful, variegated variety of the above; but this is rather scarce and high-priced. These are best planted in a moist place, or supplied with abundance of water; and to be kept in a moderate light place in winter. A little frost will not hurt these.

The *Acora Japonica Variegata* is a very beautiful plant for edging beds or borders of other foliage plants, or for planting clumps or margins of ponds and lakes. It is most satisfactory in moist ground. This can remain in ground during winter; it is perfectly hardy.

Arundo Donax Versicolor is a magnificent plant for a large patch near water, the center of large beds, or the back of a border. It will grow ten feet high, and has a very light and graceful look, when its beautiful, variegated leaves are waved by the wind. This is said to be hardy; but I prefer taking it up and preserving it from hard frost. The tall stems can be cut down; it will push others from the bottom.

Many of the *Solanums* may be raised from seed and are ornamental; some for foliage, and others, as *Ciliata*, for the fruit.

The finest varieties of *Caladiums* are also very desirable for the above purpose. I planted out over twenty sorts, and most of them made large and beautiful colored leaves, many of them superior in color to the same kinds inside. Keep this, in winter, with *Tuberose* roots.

The *Alternantheras* are indispensable for hedgings, and the color of *grandifolia* and *amabilis tricolor* is very striking; but they require keeping during winter in a warm greenhouse.

Coleus are so well known that I need not say much in praise of them, and we have so many sorts, it is difficult to select, but as many of the rich colors indoors are not at all the same planted out, I will mention *Verschaffeltii* as best dark, and *Princess Royal* as best golden.

In a future article I will mention a few of the more rare ornamental plants which are very desirable for this purpose. In this I have confined myself to a few easily managed by any novice.

Horticulture and Landscape Gardening in England.

An Address, by P. T. Quinn, before the Rural Club of N. Y.

THE first view of the British Islands, as seen from the deck of a steamship, in the English channel, is strikingly beautiful and picturesque. The distant and green-clad hills of the county Wicklow, Ireland, and the bold, abrupt, and in places precipitous landscape of Wales, divisioned off into fields by the neatly trimmed hedges, is a pleasant and enjoyable picture, coming suddenly upon one, after a ten days' voyage, during which time little or nothing is seen, but sea and sky, with an occasional spout of the ever-welcome *whale*, to break into the monotony and lazy habits one falls into in crossing the Atlantic. But on approaching Liverpool through the Mersey, there follows a sad feeling of disappointment, with this muddy, sluggish, stream, flowing lazily along; as if without purpose, and confined on either side with tame and uninviting banks. One wonders that in a country with a world-wide fame for its cultivated tastes in embellishing its landscape, where gardening was taught and fostered, as one of the fine arts, as early as the sixteenth century, that so little has been done to adorn and beautify the banks of the river leading to the great shipping port of the world. But this disappointment soon vanishes when leaving the outskirts of this, the center of the shipping interest, for travel in whichever direction you may, the general appearance of the country is that of a well kept and highly cultivated garden, when compared with our own country, where fertile land is too plenty and too cheap to call for the same kind of close cropping. The total absence of the unsightly post and rail fences, and in their stead the thorn hedges, gives tone to the landscape, and adds much to the general appearance of the face of the country, that grows on one the more they see of it.

Another feature, common in England, Ireland and Scotland, and one well worthy of imitation in our own country, is the tasteful manner in which many of the railroad companies keep the enclosed spaces on either side of the tracks. The spare ground is laid down to grass, which is mowed twice a year, leaving a fine turf for hundreds of miles on a stretch. This, in connection with depots built of stone, from handsome designs, and the walls of such buildings not unfrequently hidden from sight, by the luxuriant growth of ivy, and other climbing vines, with a tastefully laid out flower garden near by—and often I have seen the name of the station, from the car window, in growing flowers of brilliant colors.

The natural advantages of the mild and moist English climate, make it comparatively easy work for the English gardener to produce and keep up a succession of fine effects. Among the most noticeable in all well kept gardens, parks, and pleasure grounds, is the exquisite fine character of the turf, looking in midsummer, fresh, green, closely shaved, soft, velvety and elastic to the foot. One who has not seen a well tended English lawn, cannot conceive how much it adds to the finish of a country home. In all country places having any pretensions, the "ribbon" style of arranging flowers is quite common; and where the plants have been set with a view to the harmony of colors, this style proves a great success. Then follows the plan of massing colors. Beds cut out in graceful and artistic shapes, planted with a single variety of flowers, or a bed of ornamental leaved plants. The geranium, golden

feather (*Pyrethrum*), dwarf nasturtium, mignonette, lobelia and coleus are often used for this purpose. While in some of the best kept places, long beds of dark blood-leaved beets were grown for ornamental purposes, and contiguous to other plants, one could hardly imagine they would harmonize and give such richness to the whole.

Window Gardening.

There is no doubt that the mass of the English people enjoy and cultivate flowers more generally than the Americans. This fact is demonstrated in the extent that "Window Gardening" is practiced in and about every village, town and city; among the poor, as well as the rich, are to be seen structures on the window sills, kept constantly filled with flowering and ornamental leaved plants through the whole season. In the more wealthy neighborhoods these window structures are elegant in the make and finish, and in places the whole front of a house would seem ablaze with bright colors and climbing vines. Through the mechanics' and laborers' quarters there would be a less gorgeous display; but even in the most wretched hovels, where the poor are compelled to live, it was quite common to see, in a back alley, on the sill of a window, four or five stories up, a single plant of geranium, or a pot of mignonette, that had been carefully tended by its owner. The demand is so large for this class of plants, that they are propagated by the million, and sold at very low rates, when compared with our prices for the same kind and quality of plants. Fuchsias, strong, stocky plants, for twelve cents apiece; geraniums, balsams, calceolarias, etc., etc., at from four to six cents, or one-sixth of what they would cost here. In London, propagators from the suburbs send thousands of these flowering plants, every morning, to Covent Garden market; from here they are distributed, by men, women and boys, to all parts of the city, each of whom has his own customers, and keeps them supplied with whatever kinds they may want, not only for window decorations, but also for garden culture.

Where there was such a demand for annuals, there must be some place where the seeds were grown in great quantity. A visit to the flower farm of Dunnett & Beale, at Dedham, Essex county, soon solved this inquiry. Here I saw more than 200 acres, exclusively devoted to raising flower seeds; and at the time of my visit, the bulk of the past season's crop was in full blossom, presenting a display well worth a trip across the Atlantic to see. This, however, is a mere skeleton of one branch of the commercial florist's business on the other side of the Atlantic.

Fine Plants.

A visit to the mammoth establishments of James Veitch & Son, Wm. Bull, E.G. Henderson & Co., Wm. Rollisson & Sons, R. A. Prance, George Jackman & Co., Wm. Paul, Thomas Rivers, and hundreds of others in the suburbs of London, one can see a choicer and very much more expensive class of plants, where the price of single specimens will range from \$5 to \$60 apiece, and plenty of demand for this class of stock. I saw in one of these establishments a dozen of large Azaleas sold for \$60 apiece, to go to St. Petersburgh, for embellishing a banquet hall next season. In another, I saw fifty pot grape vines, in fruit, at \$12 apiece, for a dinner party of a wealthy Londoner. Nor were these rare cases; for one familiar with plants need only examine the stock to judge of its value. The horticultural societies are far-sighted enough to offer

large money premiums for fine plants, and the exhibitions that I attended seemed to warrant this course. At the exhibition of the Royal Botanical Gardens, I saw more, and choicer plants shown by a single exhibitor, than I ever saw by one Society, including all exhibitors in this country. Just imagine Fuchsias six feet high, and four or five in diameter, completely covered with flowers; Erica Candelleana, six feet in diameter and three in height; Alamandia grandiflora, a mass of flowers; Pelargoniums, more than seven feet in diameter; also, John Waters & Sons' collection of Azaleas and Rhododendrons, the finest in the United Kingdom; in fact, these would make an attractive exhibition without further accession.

Roses.

In England the Rose seems to have attained perfection, and the demand is very large. In walking over the grounds with one nurseryman in the suburbs of London, he showed me his stock of forty acres of standard roses, and he assured me he was not one of the largest growers. At the rose show at Sydenham Palace, the cut roses were arranged in shallow boxes filled with moss, each box holding forty roses. These boxes were placed in a line, and this line extended just half a mile, and the large size of the roses was quite as surprising to me as that of the whole exhibition. Another and very interesting feature of this show, and one that I hope some day to see adopted by our own Societies, was that of offering liberal premiums for dressing breakfast, lunch and dinner tables with flowers. Here the tables in each class were set, ready for a meal, with the plants arranged by the competitors, which in this instance were about forty in number. For this purpose the different varieties of the Fern were arranged with graceful and pleasing effect. In fact, this part of the exhibition was more attractive to me than that of the roses.

The London Horticultural Society's exhibition was smaller than I had reason to suppose, from its standing and antiquity; still, the collection of Jackman's Clematis, in size, variety and brilliancy of colors, more than paid me for my visit. This, with the hospitable reception from the active members of this representative Society, will always be remembered by me with pleasure.

Gardening.

In what may be termed ornamental gardening, the English are far in advance of us, but in the more practical part we take the lead by at least twenty years. During my stay in England, I visited many of the largest and best-managed vegetable farms in the vicinity of London, and I was surprised to witness their primitive methods, both in their system of cropping and tedious way of doing the work. It is quite within bounds to say, that a man familiar with trucking in New Jersey, will do a third more work in a given time than a man in the same position in an English garden. The ordinary implements used by the latter are clumsy and unnecessarily heavy, and this weight has to be carried around at a considerable waste of strength both of men and animals. For instance, a common digging spade or fork will weigh at least twice as much as one of ours, intended for the same class of work. There is more weight of wood in an English garden cart than would make two or three of ours, and this seeming unnecessary weight will be found to run through the whole list of English farm implements.

Small Fruits.

Small fruits are grown on a large scale in the outskirts of London. At the fruit farm of Mr. F. Dancer, one of the most successful growers in the neighborhood of London, I had an excellent chance to study their methods. With raspberries, blackberries, currants and strawberries, our method of cultivating and yield would equal that of the best English growers. But with gooseberries the English are so much larger and so much more prolific, that I would not even think of drawing a comparison. I saw growing at Mr. F.'s farm, fifteen acres of gooseberries, without apparently a diseased leaf or berry. The heavy spring rains and late frosts destroyed the crop of apples and pears in England, so that I had no opportunity of seeing orchards in full bearing, and had to be content with drawing conclusions from the growth and foliage of the trees. But in Belgium and France, I examined many noted collections of these fruits, and I returned home with the firm and proud belief that with apples, pears and peaches we can beat the world, in size, quality and production.

Small Fruits for Family Use.

BY HENRY T. HARRIS.

IN a short time those who desire to put out new beds of small fruits must begin to make the necessary preparations.

We do not propose to give, in this article, any instruction as to the mode of planting, but will reserve that matter for the next number of **THE HORTICULTURIST**.

We wish to speak of those varieties of fruits which have been found, under all circumstances, to do well; at least south of Ohio, and in the West.

One great error which many persons fall into, is that of planting too many kinds. Another is, in buying a few plants of every new variety which is placed before the public with high-sounding names and many "certificates" of excellence.

The safer and wisest course to pursue is, to ascertain the names of two or three sorts, which experience has taught you to be good, and plant no other, unless you are an amateur cultivator, and desire to try experiments.

Strawberries.

I begin with the "same old story," and name first the immortal Wilson's Albany, because you simply cannot do without it. Large, beautiful in color and shape, a great bearer in all kinds of soil, and good enough for any palate, we would part with any other half dozen kinds rather than this. True, there are many others of finer flavor, but all things considered, we name the Wilson's Albany king of the strawberry realm.

Scarcely inferior to this, is the wonderful *Green Prolific*. My bed of twenty by thirty feet yielded, the second season, over thirty measured gallons. And such berries!

Then I name *Downer's Prolific*, a native of Kentucky, which gives a large general crop, earlier than any other known sort. A little too acid, some say, but crushed sugar in abundance, scattered through them a few hours before use, makes that point all right.

I close the strawberry list by naming the *Kentucky*, also a native of the State whose name it bears. It is not a prolific bearer, but the berries are so large and beautiful that I would be slow to discard it on account of its failure to bear so abundantly as its kinsman, *Downer's Prolific*.

Of course, there are many other kinds which are excellent in quality and fine bearers, but what we desire to impress upon the growers of small fruit is, to select a few of the best, and let the curious folks of the world experiment with the many kinds and the high-priced new varieties.

Raspberries.

Close upon the death of the strawberry crop steals the luscious raspberry. Many persons prefer this fine fruit to the other—we are not of that faith, however.

As before stated, in reference to the strawberry, we say don't plant too many varieties, but be sure to begin with the *Mammoth Cluster* (a variety which has several *synonyms*), and let us assure you that you will not regret it if you make this kind occupy at least one-half of all the space you can spare for the raspberry. Large, beautiful, and wonderfully prolific, you will stand amazed at its loads of splendid berries; which, for table use when fresh from the canes, and for winter use when canned, there is no other kind to equal it.

Next to this, of the black-caps, get the Doolittle and Davison's Thornless, in equal numbers, and you will have all you want of this color.

By no means fail to plant a goodly number of canes of the famous and abundant-bearing *Purple-Cane*. "Jam," made of this variety, is perfectly superb, and it bears enormous crops of fruit almost every year. A family can scarcely do without this delightful berry. Try a few canes of it, if you doubt the truth of what we have here asserted.

Many persons prefer the red varieties, and we believe that in the market this color sells, generally, for at least a third more than the black-caps. We name, for this kind, the *Hudson River Antwerp*, although in many soils and climates it does not succeed well; however, it is a magnificent berry.

We name, also, the *Clarke*, which is large and beautiful and of superb flavor.

The *Philadelphia*, although not strictly a red berry, but between a red and purple, is, in our opinion, and according to our observation and experience, the finest berry grown, of any color. The crops are enormous, the fruit very large, and the flavor fine. If we had to select two kinds only of the raspberry for culture, we should unhesitatingly choose the *Mammoth Cluster* and *Philadelphia*.

Currants.

The number of really good varieties of currants is short. There are many kinds, but when we select the *Red Dutch*, the line is fully drawn. Other kinds are larger, but then, we only need currants for jelly, principally, and this kind is amply sufficient.

In our next article, we shall attempt to give our mode of small-fruit culture.
Stanford, Ky.

Pear Notes.

BY E. SATTERTHWAITE.

I PROMISED to send you some pear notes, from observations made during the last two years. In a paper, read before the Pennsylvania Fruit Growers' Society, two years ago, and published, I believe, in *THE HORTICULTURIST*, I gave my experience with pears at considerable length. Since that time, I have not had occasion to modify, to any great extent, the views therein expressed, except in so far as the tendency to blight, which I have discovered in some varieties have materially lowered their value; and others, found comparatively exempt, have been correspondingly raised, in my estimation. Last year's experience, however, with pears, was so peculiar as to be worthy of particular notice. The extremes of weather, which prevailed during a great part of the year, having, in some way, had a remarkable effect on the pear crop, as well as on all other fruits. One thing most noticeable was, that many old sorts, long since condemned because of their liability to crack, were last year as fair and fine as could possibly be, not the least tendency to crack showing itself in any variety; even White Doyenne was perfect and fair as could be desired, and Glout Morceau, which has seldom before been good for anything here, from its disposition to crack, and other defects, was last year, about the finest and best crop of any in my grounds, among some five hundred varieties I had fruiting. Easter Beurre, also, which for some years has been utterly worthless, from a peculiar fungoid affection, was all right last year. These, and many other similar cases that might be mentioned, are such remarkable exceptions to the general rule, as to awaken a most interesting inquiry as to what peculiarity in the season could have produced such wonderful effects. Why was it that varieties of pears that have been uniformly cracked, or otherwise so defective as to be good for nothing for many years, were last year entirely free from defects of any kind, and as fine as could be desired? I do not feel qualified to throw any light on this question, but it is one certainly well worthy of investigation, for its solution could not fail to throw light upon some of the most embarrassing questions connected with pear culture. The extraordinary healthiness and abundance of other tree fruits last year could be, in great measure, ascribed to the comparative scarcity of curculio, and other fruit-depredating insects, but no insect (at least none that is apparent) has anything to do with these pear diseases. Whatever may have been the cause of this remarkable exemption from disease alluded to, it is not likely that it will be anything but temporary, and it would not be safe, as yet at least, to count on any permanent improvement in these varieties.

Though the season, last year, was such a remarkably healthy one for fruit products, it was not so for the trees. Owing to the extreme drouth, the growth of wood was poor, and blight prevailed to a much greater extent than I have ever known; in fact, with the exception of a few cases the previous year, I have never before noticed it in my grounds, without it may have been in a few instances which were ascribed to other causes. From many circumstances that have come under my notice, I am induced to believe that the generally accepted theory of Downing, that this disease is caused by the freezing of the sap in the unripened wood in the fall, can hardly be correct. If it were not for encountering the weight of such high authority, I should be inclined

to ascribe it to the effect of the intense heat of the sun in extremely hot days. I noticed in particular, last summer, after every hot spell, some of my trees were blighted, which before showed no signs of disease, and this continued until the last of the very hot weather, in September. It has occurred to me that "fire blight" may be nothing more than the burning or drying up of the wood from the immense evaporation going on from the foliage and all parts of the tree, under the intense heat of an unusually hot summer's sun—one of those days, for instance, when fruit lying on the ground, exposed to the sun, becomes baked, and tomatoes cooked on the vines. A number of such days we had last summer, and I always noticed, immediately after their occurrence, fresh victims of blight. The extreme drouth that prevailed in this neighborhood, nearly all the summer, would seem to favor this theory, for the drier the ground, the less chance a tree would have to obtain a sufficient quantity of moisture by its roots to supply the tremendous drain under the intense heat of such a sun.

Since I have been growing pears, we have never had a summer anything like as dry or as hot as last year was, and this is the first pear blight I have had of any consequence. Among many other incidents that led me to think that the disease could not have been in the trees from the previous autumn, I will just mention one: I planted a number of pear trees, received late in the spring from a northern nursery; all of these trees, of the kinds liable to blight, were more or less affected, in the localities on my grounds where blight prevailed, and in other localities were exempt. Now, how could that have happened, if the disease had been in the trees from the autumn previous, which, according to the Downing theory, it should have been? and, besides, I am certain, from having planted and pruned these trees with my own hands, they were entirely free from disease when planted. It may be asked why blight generally attacks certain portions and not others of the same grounds; this may be, that from some peculiarity in the soil, in those situations where blight prevails, the trees are not able to obtain as much moisture through their roots to supply the loss by evaporation, and consequently are unable to resist as great heat as those in more favored localities. I noticed, also, that the trees that blighted worst were not generally those that had made the rankest or late fall growth, as should be the case, according to Downing; also, that the worst sufferers were some that had not been manured for several years, and had made but little growth. The above views are thrown out merely by way of suggestion, nothing more; I consider the question as yet unsettled. One thing, however, seems pretty certain, that whatever the cause may be, it is, in a great measure, if not entirely, beyond our control, and that the only remedy within our reach is to find out the varieties that are the most exempt from the malady, and to plant only these. Fortunately, I think it will not be difficult to obtain a list of such varieties, embracing as great a number of sorts as is desirable, and extending throughout the season. It must be remembered, however, that varieties good in one place are not always good in another, and here is where the trouble comes in, as every locality must find out for itself what sorts will do best for it. I will, however, give, from the leading varieties, a list of those that I have found liable to blight, and also of those most exempt, which will probably be found to hold good generally:

Varieties, as blighting badly, I mention Madeleine, Dearborn's Seedling, Osband's Summer, Belle Lucrative, Louise Bonne de Jersey, Marie Louise, Beurre de Mont-

geron, Forelle, Urbaniste, Golden Beurre of Bilboa, Passe Colmar, Catillac, Glout Morceau, Vicar of Winkfield, Easter Beurre, and some others of lesser note. As not blighting at all, or very rarely, I would name Seekel, Lawrence, Duchesse d'Angouleme, Beurre d'Anjou, Buffum, Manning's Elizabeth, Early Catherine, Kingessing, Rutter, Doyenne Boussock, Kirtland, Beurre Clairgeau, Beurre Bosé, Cushing, Dix, Ananas d'Ete, and many others not so generally known. There are also a number of valuable varieties that might be mentioned, liable somewhat to blight, but not enough to entirely condemn them, such as Howell, Bartlett, Doyenne d'Ete, Beurre Giffard, St. Michael Archangel and Doyenne d'Alencon.

Jenkentown.

Home Gardening.

Andrew S. Fuller commends the following List in the *Rural New Yorker*:

Twelve Hardy Shrubs.

In this list I shall name the most hardy as well as beautiful.

Amygdalus pumila.—Double rose-colored almond; an old and well-known plant.

Amygdalus pumila alba.—Double white flowering almond.

Azaleas, nudiflora and viscosa.—Both natives of the Northern States, and scarcely surpassed by any exotic species.

Calycanthus floridus.—The well-known sweet-scented shrub. Flowers dark chocolate color.

Deutzia crenata plena.—Flowers double white, tinged with rose color; superb.

Deutzia gracilis.—A very small shrub, with long spikes of pure white flowers; a splendid plant for forcing in winters.

Forsythia viridissima.—Flowers yellow, produced very early in the spring, before the leaves.

Japan Quince (Cydonia Japonica).—Flowers large, deep scarlet; produced early in spring.

Prunus triloba.—A beautiful shrub, with double flowers of a deep pink color. It succeeds best when worked upon plum stocks.

Spiraea Reevesii.—Flowers pure white, in large clusters, appearing about the time the leaves are fully developed.

Viburnum opulus.—The well-known snowball; a shrub deserving a place in the most select list.

Weigela Hortensis nivea.—Flowers pure white, blooming in late spring.

A good selection of hardy shrubs should consist of not less than fifty species and varieties, and then the best of the old favorites, as well as a few of the new kinds, can be included.

Mr. Fuller also advises the following

Twelve Winter-Blooming Plants for Small Greenhouses.

Abutilon vexillarium elegans.—A half-climbing shrub, bearing a profusion of scarlet, orange, and pink flowers. There are also many other species and varieties, varying in size and color of flowers as well as habit of the plant, all desirable.

Azalea ovata alba.—Flowers pure white.

Azalea purpurea plena.—Flowers double, deep crimson.

Bouvardias.—There are several varieties in cultivation which are indispensable. *B. leiantha* is a dazzling scarlet; *B. floribunda*, orange scarlet; *B. Hogarth*, rich scarlet, large racemes of flowers; *B. Davidsonii*, pure white; *B. Vreelandii*, similar to the last, but distinct.

Camellia fimbriata.—Flowers very large, edge of petals delicately fringed.

C. alba plena.—Old double white, but one of the best. These two are considered the most valuable for cut flowers; but the colored sorts are equally as beautiful, and one can scarcely go amiss in making a selection, as our florists propagate only the best, there being hundreds of varieties to select from. They all succeed best in rather a low temperature and partial shade.

Cuphea platycentra.—Small, slender, evergreen shrubs, extensively used for bedding out in summer, but far more valuable for its flowers in winter. Flowers small, scarlet, tipped with white; often called "Cigar plant."

Fuchsia serratifolia.—Flowers large, scarlet; leaves dark rich green and very large; an excellent early winter-blooming species.

Gardenia florida.—This single variety is the best for greenhouse culture. Flowers white; very showy.

Lagerstræmia Indica alba.—This is a variety of the well-known Crape Myrtle of the Southern States, where it usually blooms in autumn; but when cultivated in pots in the Northern States, it is one of our finest early winter-flowering shrubs. Flowers pure white and produced in great abundance.

Punica nana.—New dwarf pomegranate. Flowers beautiful orange-scarlet; very handsome.

Suggestions for Planting Home Grounds.

Amateurs should be educated to make their own selections of trees, and plant according to right principles. They must therefore learn, as well from *experience* and *observation*, as well as follow the advice of landscape gardeners or horticultural journals. At a recent meeting of the Jacksonville (Ill.) Horticultural Society, Dr. McFarland read a good report from the committee on trees and shrubbery, which contains much common sense advice. Evergreens should be planted not so much for immediate effect, as for future use and beauty. Space, sunlight and protection are their three absolute requirements, and any attempt to grow them to perfection in crowded groups, or in enclosures where grazing animals are ever allowed to roam at large, will be met with certain failure.

Rules for Selection, Planting and Care of Evergreens.

1st. Select the trees by personal examination in the nursery, and always those with single stems.

2d. Patronize your nearest reliable dealer.

3d. Plant in damp weather in the spring, with the least possible exposure of the roots to the sun and air. In his own experience the loss in fall-planted trees had been ten per cent.—in spring but two per cent.

4th. Prune all mutilated and broken roots; spare no pains in setting the tree; one minute's extra time given then more than equals a year's growth. To secure the best results, each tree should be allowed at least forty feet of unshaded greensward.

5th. Mulch for a year or two. In speaking of deciduous trees for street shading, he mentioned the white elm as first in beauty; the silver and soft maples were also highly recommended, and advocated the action of the town authorities in this matter the same as with sidewalks. The huckleberry, tulip and coffee tree should be found in every lawn.

Prof. Turner also read a short paper, and to the point. For the street he considered the elm the king of shade trees. The soft maples are all of quick growth, but short lived, and apt to be broken down and deformed with ice and winds, and liable to be attacked by borers. The various varieties of the hard maple are also most magnificent trees, but in our county it is a slow grower, and so liable to a fatal blight from some unknown cause, that it is not reliable as a street tree. The sycamore is also a very hardy and reliable tree for the street, and it would add greatly to the beauty of our city if we could occasionally get out of "Elm street" and "Maple street," and ride a short distance in a street lined with a majestic row of sycamores on each side, with their broad, light green leaves, and pendant batten. An occasional street, too, lined with the Tyrolese larch, would be a still greater relief, though it furnishes less shade than either of those above mentioned. But for quickness of growth, beauty of form, spray and foliage, I know of no two trees that equal the American chestnut and the tulip tree. The fruit of the former is very valuable as well as the timber, but it succeeds well only on dry, mellow soil, and can be successfully transplanted only when small. The leaves of the tulip tree are, so far as known, perfectly free from all sorts of insects and blights. Every considerable house-yard in town ought to have one or more of these noble trees in it, instead of those interminable rows of soft maple. The weeping willow, Toplady poplar, and white birch were recommended for variety. There is no single tree that contrasts so beautifully and harmoniously with the common evergreens as the deciduous cypress. The balsam fir is quite fashionable, but the tree itself bears no comparison to the majestic Norway pine or the spruce. The black spruce of Maine was highly commended. All evergreens should be transplanted or have their roots cut every two or three years while in the nursery, to render them both safe and reliable for transplanting. All top-rooted trees, and especially the chestnut, need the same treatment. Evergreen hedges and screens are "a thing of beauty" and "a joy forever." Every one of the old cross fences between our city lots ought to be removed, and a beautiful evergreen hedge planted in their places. The hemlock, and the Siberian and American arbor vitæ are the best for this purpose. As to shrubs, said the Professor, properly so called, I have come to regard them as but little else than a nuisance everywhere. A few of them, well back, will do, and recommended the barberry, the Japan quince and the snowball. He did not favor the idea of crowding' evergreens so closely about our dwellings as is the custom with people generally.

Plaster of Paris as a Manure for Vines.

A correspondent of *The Garden* says he had a large quantity of grape vines planted in the open ground, and trained on poles and wires along the gravel walks. "In planting these, I had the holes dug about twenty-five inches deep; I then threw into each hole five or six lumps of old plaster, about the size of my fist; I

threw a little earth over the lumps, and then planted the vines in the usual way. The result has been wonderful; the vines, which were not half an inch thick when planted three years ago, are now two inches and more in diameter, and bear finely. The grapes are also freer from disease. Other vines, not so treated, are much smaller and produce less, the fruit being also more liable to disease. To try the effect of this plaster, in planting two American black walnuts, we put the plaster to the one and not to the other. The former grew twice as fast as the other. Last year we dug about the roots of the one to which no plaster was put, and we threw in seven or eight large lumps of plaster among the roots; the trees are now both of the same size, and though only four years old, are sixteen to seventeen feet high."

Killing Trees with Salt.

Dr. Kedzie, of the Michigan Agricultural College, speaking of how salt is taken up in the circulation of trees, relates a case of its fatal effects that came under his own observation. On the college grounds formerly grew a fine vigorous specimen of common sassafras (*Sassafras officinale*), apparently in perfect health. A quantity of strong brine was inadvertently thrown beneath this tree, forming a stagnant pool in its immediate vicinity. In a very short time the tree began to manifest signs of decreasing vitality. The salt was absorbed unchanged in such immense quantities that, entering the circulation, it effloresced upon the surface of the leaf, in white crystalline deposits, after which the tree grew rapidly feebler and died.

Fruit Trees as Ornaments.

Why can we not introduce them more freely on our lawns for ornamental purposes? A writer in the English *Journal of Horticulture* thinks that there are few objects more beautiful and interesting during the spring or early summer months, than our common cultivated fruit trees, and there really does not appear to be any good reason why the fruit garden should not constitute a necessary portion of the policy or pleasure grounds of every country mansion. What can be more beautiful than the apple tree, the pear, the plum, and the cherry tree, in full flower? And they are in fact exceedingly interesting objects at all seasons. But it rarely happens that they are placed in a position where their beauty can be appreciated and enjoyed. They are too frequently found in the vegetable garden, where they are entirely out of place, unless it be in the form of espaliers or cordons; or they may possibly be found in a somewhat neglected and out-of-the-way locality known as the orchard.

But as an advance or improvement upon this state of things, might not these useful and ornamental trees be cultivated with more pleasure, and at least equal profit, in a tastefully designed garden or compartment by themselves, and forming at the same time an essential part of the pleasure grounds? Clumps or groups of varied forms and dimensions could be formed of pyramidal or otherwise trained apple, pear, plum, and cherry trees, etc., which might be margined by low slender cordons of their respective kinds; while single standard trees of various sorts might, in suitable situations, be allowed to assume their natural habits and dimensions, the whole area to be traversed by winding and comfortable walks, to afford every facility for the examination and enjoyment of the beauty of the various fruits in all stages of their development.

A Few Choice Flowers.

BY HENRY T. HARRIS, STANFORD, KY.

Come, gentle Spring, ethereal mildness, come!
And, from the bosom of yon drooping cloud,
Veiled in a shower of shadowy roses,
On our plains descend.—*Thompson.*

HOW many hearts are longing for her coming? How many hearts grow warm at the first bright sunbeams that flood the earth, telling of her near approach? And why? Because in her lap comes the lovely flowers. First, the violet, peeping from a snow-drift on the sunny side of some old log in the woodland! Then, nearer home, the old daffodil or jonquil, and others of the days when grandmother's garden looked so charming by the presence of the early and simple flowers. Who would fail to plant them, if only for the reason that grandmother did so, and loved them too with as much affection as our modern florists love the gaudy roses or camellias of the greenhouse.

But this is a digression from the subject before us. All of us cannot have greenhouses or conservatories. Some of our readers are poor, and must content themselves with a few hardy flowers which grow from seed plants, in early spring, upon some warm border, and many of these are truly lovely. Some of them bloom for many weeks, and a succession can be had with only a mite of daily or weekly care.

We propose to name a few of the more simple ones, in order, if possible, to help some lover of these "earth-angels" (as some one has well termed them) in selecting those which they can afford to care for.

First, then, let us name the wild-wood violet. Gather a few bunches of the white and purple from the woods before the buds open, and with plenty of their native soil, transfer them to a warm spot on your border in front of the door, and you will be amply rewarded.

The daffodil should always find a place on the border. The Pyrus Japonica, or Japan quince, a thorny shrub, slow of growth, but beautiful in its pink and crimson glory when grown, gives a magnificent display in early spring. The Phlox is always beautiful and desirable. There are several kinds. The hardy tulip, the many-hued gladioli, the many kinds of lilies—all of which are now cheap—will give increased and increasing loveliness to the yard of the millionaire, or the doorway of the humble mechanic, who comes home after the toil of the day is done, to sit under his pleasant roof with his little prattlers, and with Mary, the eldest, whose busy hands have found time to plant and nurse those lovely things.

A few hardy roses, in variety, can be had for a mere pittance. There are many other kinds just as beautiful and desirable as the above, but we name these only to give a hint to those who may desire to plant a few when the spring-time opens.

Do not neglect it. Do not cramp yourselves down between walls all your lives, while God's most'beautiful creations are to be had at such trifling cost.

Horticulture in the Northwest—Action of State Societies.

BY OBSERVER.

THE rapid and marked progress of horticulture in the Northwest, for the last ten years, is worthy of special note. Neither is it confined to isolated localities, favored situations, or peculiar tact of certain persons. The entire country has been alive with enthusiasm in the cause of tree planting. To one who has not been a close and constant observer of these things, the story of progress made would hardly

seem ereditable. The failures of early settlers is not to be wondered at, when we remember that Minnesota and Wisconsin were mainly settled by emigration from Ohio and New York; and the eagerness with which these parties called for and planted the good old Spitzenberg, Rhode Island Greening, Baldwins, and other eastern varieties. And to this day, many there are who will yet call for these, and feel aggrieved because they find them not, and almost doubt the honesty of nurserymen when assured of the worthlessness of these for this climate.

But happily we have been traveling in the right direction. Upon the verge of despondency, but eager for fruit, the anxious inquirer took to the crab varieties, as better than nothing. These succeeded, grew and fruited finely. This was a start in the right direction. Taste and desire enlarged, and knowledge increased. The first lesson learned from this was, that we must seek hardiness—quality and quantity even to be added afterwards. Varieties were selected upon this principle, and from it more knowledge as to treatment of varieties in general. The late meeting of the Minnesota State Horticultural Society developed such a state of progress in that State, as was little looked for. At this meeting, held January 14 to 17, there was a very fine display of fruit, many exhibitors placing twenty or more varieties on the tables; and these included many sorts usually considered tender, but by the experience of years in selection of location, they were a success. The experience of all was well told, and the merits of varieties well discussed. It was not thought advisable to recommend a large list for general planting; better a few well tried certain sorts—with these growing satisfactory, the list on every farm would be rapidly increased. The society unanimously recommended, for general planting—early, Tetofsky and Duchess of Oldenburg: fall, Fameuse, Haas and Plumb's Cider; winter, Ben Davis; for trial, Red Astrachan, St. Lawrence, Autumn Strawberry, Saxton, Price's Sweet, Talman Sweet, Golden Russet and Romanite; pears, Flemish Beauty. The annual address was delivered by Philip S. Harris, of the Land Department of the Lake Superior & Mississippi Railroad. This was a masterly effort. In good plain English, without any attempt of the spread eagle, Mr. H. set forth the merits and claims of Minnesota.

Passing from this meeting, we come to Wisconsin's annual gathering, held at Madison, February 4 to 7. This meeting was unusually well attended. The fruit display was not as large as that of Minnesota, and was made up mostly of new varieties, which promised special merit, or seedlings. In this collection was the Pewaukee, which promises to be a very valuable acquisition to the West, and to take the place of the Rhode Island Greening at the East. It is a seedling of the Duchess of Oldenburg, which it resembles very closely in tree, an enormous bearer, and following in season the Fameuse—supplies a place before deficient. The Ben Davis, fair as the fairest, was on the table, more beautiful than ever. This variety is being called for very extensively throughout the West, on account of its hardiness in both nursery and orchard, abundant bearing qualities; and the very fine appearance and late keeping qualities commands for it a ready market.

There was also a good display of grapes. A good deal of attention is now being paid to the cultivation of the grape, and many are succeeding very well in keeping them till mid winter, when the fruit is in demand at remunerative prices.

There were a large number of very practical papers read. The fruit and tree lists were thoroughly revised, and the following lists presented to the public as the result of the deliberations of those present:

Apples.

For General Culture—Red Astrachan, Duchess of Oldenburg, St. Lawrence, Fameuse, Utter's, Plumb's Cider, Westfield, Seek-no-Further, Talman Sweet, Golden Russet, Willow Twig.

Commercial List—Red Astrachan, Utter's, Fameuse, Pewaukee, Ben Davis, Walbridge, Willow Twig.

Amateur List—Tetofski, Early Joe, Sweet June, Sops of Wine, Fall Stripe, Autumn Strawberry, Fall Orange, Bailey Sweet, Fall Wine Sap, Blue Pearmain, Rawle's Janet.

Hardest Apples—Tetofski, Duchess of Oldenburg, Haas, Fameuse, Plumb's Cider, Ben Davis.

Pears.

For Continued Trial—Flemish Beauty, Ananas d' Ete, Early Bergamot, Bartlett, Swan's Orange, Seckel, Winter Nellis.

Grapes.

Delaware, Concord, Lindley (Roger's No. 9), Agawam (Roger's No. 15), Salem (Roger's No. 22), Wilder (Roger's No. 4), Janesville, Worden, Eumelan.

Plums.

For Continued Trial—Lombard, Imperial Gage, Hinkley (or Miner), Red Egg, Yellow Egg, Eldridge.

Strawberries.

For General Culture—Wilson's Albany.

Family and Near Market—Green Prolific.

For Continued Trial—Peck's Emperor, Charles Downing, Reed's Late Pine, Victory, Burr's New Pine, Boyden's No. 30 and Arena.

Raspberries.

For General Culture—Philadelphia, Davison's Thornless, Mammoth Cluster.

Evergreens.

For General Planting—Norway Spruce, White Pine, American Arbor Vitæ, Scotch Pine.

Ornamental Planting—Austrian Pine, Balsam Fir, Siberian Arbor Vitæ, Hemlock.

Trees for Timber Planting—European Larch, Green Ash.

Pears.

The culture of pears was very thoroughly discussed, and much conflicting testimony was given. The following resolution expresses the sense of those present:

Resolved, That we recommend the planting of pears upon high, airy locations in well drained soils of only medium richness or those decidedly lean, with culture enough to secure a fair but not excessive growth. That if soils are excessively rich, their growth should be checked by root-pruning in summer, or grassing the surface adjacent.

The election of officers resulted in the re-election of most of the old officers, Geo. E. Morrow taking the place of Mr. Willey as recording secretary. Of Mr. Willey's fitness, and labors in the past, the *Western Farmer* says:

"The late recording secretary, O. S. Willey, of Madison, declined a re-election to the position he has held since 1866. Mr. Willey has done a large amount of work for the society, more than most persons would have been willing to have done for the merely nominal pay he has received. We have had good opportunities for knowing how he performed his work, and we believe that the society owes much of the success of its meetings, of late years, to his energy and diligence. In recognition of his services, the following appropriate resolution was unanimously adopted:

"*Resolved*, That this society, recognizing the eminent services of Mr. O. S. Willey in the past, and that our present position is due, in a great measure, to his efforts in its behalf, do hereby tender to him our thanks, and that as a partial recompense we hereby elect and constitute him a life member of this organization."



The Mechanical Structure of Plants.

BY J. COCHRANE, HAVANA, ILL.

[CONTINUED.]

IN the above enumeration we first notice a unity of purpose under a variety of expedients. Nothing can be more single than the design, more diversified than the means. Pecciles, shells, pulps, pods, husks, skins, scales armed with thorns, are all mechanically employed for the same end. Secondly we may observe, that in all these cases the purpose is fulfilled within a just and limited degree. We can perceive that if the seeds of plants were more strongly guarded than they are, their greater security would interfere with other uses, many species of animals would perish if they could not obtain access to them. Here, as in many cases, a balance is to be maintained between opposite uses. The provision for the preservation of seeds, appears to be directed chiefly against the inconstancy of the elements, and the inclement season. The depredations of animals and the injuries of accidental violence, seem to be provided against by the abundance of the increase.

When nature has perfected her seeds, her next care is to disperse them. The seed cannot fulfill its ends while it remains in the capsule. After the seed ripens, the pericarpium opens to let them out, which is according to rule in each species of plant. Some are opened by the action of the frost, some by elastic explosion, throwing the seeds to a distance. Those of most composite flowers are endowed with downy appendages, by which they float in the air, and are carried to great distances. We are compelled to omit to notice the store of nutriment laid up in the seed for the nutriment of the young plant. A striking analogy exists between seeds and eggs of animals; the same point is provided for in the same manner. The white, and that only, is used in the formation of the chicken. The yolk, very little altered or diminished, is wrapped up in the abdomen of the young bird, to serve for its nourishment till it has learned to pick its own food. We give the most common as illustrations because of their being the most forcible.

Our second observation on the mechanical structure of plants, is upon the general property of climbers. In these, plants from each joint issue close to each other, two shoots, one bearing the flower and fruit, and the other drawn out to a tapering spiral tendril, that attaches to anything within its reach, considering that two purposes are to be provided, for the fruitage of the plant and the sustentation of the stalk. No means could be more mechanical than this arrangement presents to the eye. "We do not see," says a noted author, "so much as one tree, shrub or herb,

that hath a stiff, strong, stem, that is able to mount up and stand alone without assistance furnished with these tendrils." We make a single, simple comparison, the pea and the bean, and remark that in the pea they do not make their appearance till the plant has grown to a height to need support.

The hollow stems of canes, straws and grasses, give the greatest possible amount of strength and elasticity for the amount of material used. Joints at stated distances in these tubes are another element of strength without increase of weight, the material being slightly different. With what uniformity and care has nature provided for these stalks of grasses, grains, and canes, by covering each with an impenetrable coat of weather proof varnish.

Grasses seem to be nature's especial care. With these she carpets her green earth and paints the landscape; with these she feeds the human family, the birds of the air, beasts of the field, and the grub beneath the surface. Cattle feed upon the leaves, birds upon the smaller seeds, many insects upon their roots, and none need be told that corn, wheat, rye, etc., etc., are strictly grasses.

Corn is a monoecious panicous grass, and though the great staple of the west, it seems to be overlooked in its botanical and mechanical constructure by intelligent growers. Our bread producing plants are grasses. Those families of plants known as grasses, exhibit extraordinary means and powers of increase, hardiness, and an almost unconquerable disposition to spread their faculties for recuperation coincide with the intention of nature concerning them. They thrive under a treatment by which other plants are destroyed. The more their leaves are consumed, the more their roots increase. Many seemingly dry and dead leaves of grasses revive and renew their verdure in spring. In lofty mountains and cold latitudes where the summer heats are not sufficient to ripen their seeds, grasses abound which are able to propagate themselves without seed. The number of the mechanical adjustments are so numerous, we must content ourselves as before remarked with a reference to the more common and marked instances. Parasitical plants furnish marked illustrations. The *Cuscuta Europea* is of this class. The seed opens and puts forth a little spiral body which does not seek the earth to take root, but climbs spirally from right to left upon other plants from which it draws its nourishment. The little spiral body proceeding from the seed is to be compared with the fibres, the seeds send out in ordinary cases. They are straight, this is spiral. They shoot downwards, this shoots upwards. In the rule, and in the exception, we equally perceive the design.

A better known parasitical plant is the mistletoe. We have to remark in it a singular instance of "compensation." No art hath yet made those plants root in the earth. Here, then, might seem to be a mortal defect in their constitution. Let us examine how this defect is made up to them. The seeds are endued with an adhesive quality so tenacious, that they adhere to the surface or bark of any tree, however smooth. Roots springing from these seeds insinuate their fibres into the woody substance of the tree from which this parasite draws its life and maintenance. Another marked instance of rare mechanical action is in the Autumnal Crocus (*Cholcicum autumnale*). How I have sympathized with this poor plant. Its blossom rises out of the ground in the most forlorn condition possible, without a sheath, calyx,

or cap to protect it, and that, too, not in the spring to be visited by the summer sun, but under all the disadvantages of declining year. When we come to look more closely at its mechanical organism, we find that, instead of being neglected, nature has gone out of her way to provide for its security, and make up for all its defects. The seed vessel which, in other plants, is situated within the cup of the flower, or just beneath it, in this plant is buried ten or twelve inches under ground, in a bulbous root. The styles always reach the seed vessel, but in this by an elongation unknown in other plants. All these singularities contribute to one end. As this plant blossoms late in the year, and would not have time to ripen its seeds before the access of winter would destroy them, Providence has contrived its structure such that this important office may be performed at a depth in the earth out of reach of the effects of ordinary frosts. In the autumn nothing is done above the ground but the blooming and fertilization. The maturation of the impregnated seed, which in other plants proceeds within the capsule exposed with the rest of the flower to the open air, is here carried on during the winter within the earth below the reach of ordinary frost. Here a new difficulty must be overcome. The seeds, though perfected, are known not to vegetate at this depth in the earth. The seeds, therefore, though so safely lodged through the winter, would after all be lost to the purpose to which all seeds are intended. To overcome this difficulty, another admirable provision is made to raise them above the surface, and show them at a proper distance. In the spring the germ grows up upon a fruit-stalk accompanied with canes. The seeds now, in common with those of other plants, have the benefit of summer, and are sown upon the surface.

"How great and marvelous are His works," and how carefully are the minute details of all His creatures, animate and inanimate, provided for. Relation of parts one to another is and must be harmonious in mechanics, so in the animal economy, so in the vegetable world. None of the works of the Deity want these harmonious relations of parts and offices.

Cultivation of the Almond.

AT a meeting of the Sacramento (Cal.) Farmers' Club, a member said that, as regards soil, the almond will succeed on almost any soil we have. It will succeed on drier soil than any other tree, if it is on its own root, and if on a peach root it will succeed where it is too dry for the peach itself. He considered the Languedoc the only variety that is worthy of cultivation. We have many kinds of seedlings, but he had never seen any one that will compare with this variety. The paper-shell almond is comparatively worthless. The tree is scrubby, ugly and crooked, to begin with. Then it is not very prolific, and not only that, but the nuts are so soft-shelled that the birds destroy them all. There are risks in growing almonds in this valley because of the spring frosts. There is less risk on the high lands than on the low lands; in fact, he thought, there was very little risk on high lands. The tree is not more liable than any other tree to be injured by excessive water. They will stand more exposure, either wet or dry, than the peach tree. The raising of the nut is very profitable, and is destined to become a matter of importance in this State.

Why not have a Greenhouse?

ED. WESTERN HORTICULTURIST: To a large majority of people a greenhouse is a charming place; at least so we may judge from the admiring exclamations that escape their lips on entering one. There is something so attractive in the appearance of growing plants, and the opening and full-blown flowers, that will draw the attention of all passing by. Especially is this true during the winter season, when the contrast is so strong between the living plants within and the dreariness without. Many desire to keep plants through the winter—more than can be accommodated in the limited space of the sitting-room window; in fact, they would like to have a small greenhouse, or a conservatory, only they imagine that such an institution would be very expensive, difficult to manage, and require the help of a trained gardener.

There is a large class who could enjoy such a place, and could afford it, too, if they did not suppose the difficulties too great. To such I would say that it is *not* so hard a matter to care for a small greenhouse; there are no *great* mysteries connected with the art of propagating and growing plants, but what any one, possessing an ardent love for such, can soon learn, and know how to serve their varied wants. It is easy enough to learn how to propagate from cuttings, but the operation requires constant attention. It is not necessary to spend a term under skilled workmen, but reading and practice will teach; only the beginner will be apt to make many and sometimes costly mistakes; but experience is a good instructor. About every household there are generally men enough, or stout boys, to do the rough work of a greenhouse—bringing in fuel, clearing the furnace, keeping up fires at night, or doing anything else needed. The firing at night would not be troublesome, for with a brick furnace of sufficient capacity, enough coal can be put in at bedtime to last through the coldest nights, even when the mercury goes down to 28 deg. below zero, as it did out here the past winter. And then, as to the daily attention required by the plants—the watering, repotting, training, propagating, etc., that work could be easily enough attended to by the feminine portion of the family. In fact, I know of no more pleasant or healthier occupation for a woman (or man either), than working daily in a greenhouse, with its bright sunshine, genial temperature, and cheerful surroundings of beautiful plants and fragrant flowers. I regard it as a grand opening for those women who are sighing for “enlarged spheres of usefulness,” outside of the usual routine of household duties, or other feminine occupations.

Women can perform the duties required in growing plants in a greenhouse, whether for her own enjoyment or for profit. I know this to be so, for I have seen a stock of plants brought through winter, by a lady, and be in as fine and healthy condition as could be desired. Among plants woman can display her fine natural taste for arranging and selecting the most desirable kinds, and showing them off to the best advantage. The fine lady, with her large conservatory and paid gardener, need not condescend to look after the management, but to all who cannot afford such a luxury, and yet long for plants and flowers through all the year, I would say, build you a little greenhouse and learn to take care of it yourself, and you will find it the source of the greatest delight and purest enjoyment that it is possible to conceive of.

Rooting the Carnation.

ED. WESTERN HORTICULTURIST: In the March number of THE HORTICULTURIST I see the following query: "What is the matter with my Carnation cuttings?"

Now, Mr. Editor, I have asked the same question of old florists and gardeners, and have received the same answer, in substance. No trouble in rooting the Carnation, they tell me. Just cut off the tops of the young shoots, and put them in the sand of the cutting bench, and a very large per cent of them strike root. I did so, and after they had remained there long enough, they turned yellow and died. At last I made the acquaintance of a gentleman who had retired from the florist's trade, and I asked him if he could tell me how to root the Carnation. Said he, I could show you better than I can tell you, had I a cutting. I brought him a cutting from the nearest greenhouse, and he proceeded as follows:

Be careful not to have the cutting too *soft*, nor yet too *hard*; there is a medium between the two that is just right. Cut the stalk from an eighth to a quarter of an inch below the joint; then take hold of the leaves, one at a time, that are nearest the cut, and pull them off—being careful, in doing so, that the bark is removed from the *joint*. If the leaf breaks, without removing the bark, take a sharp knife and peel it. It is not necessary that both leaves shall be pulled off. If the cutting is small, it would be better to peel only one side.

After I received the above information, we put in 2,500 cuttings, and a large per cent of them rooted. The bark of the Carnation is impervious to moisture, and as the roots seldom start, except at the joints, it becomes necessary to remove the outside cutting. Splitting the cutting through the joint has the same effect; also, cutting the stalk diagonally through the joint. If the cutting is small, I think the best way is to peel one side; if large, either of the above will prove satisfactory.

Now this is all simple enough to the initiated; but such information as is given by Mr. Cochrane, is throwing darkness rather than light. If "Propagator" has tried the above methods, and failed, I think the failure due to the "peculiar combination in the elements in which his cuttings are placed."

Northboro, Mass.

JOHN F. JOHNSON.



NEW PLAN FOR DOUBLE WORKING PEAR GRAFTS.—Mr. P. H. Parker of Bastrop, La., writes to the *Southern Farm and Home* that he is successfully practicing a new mode for double working such varieties of pears as are difficult to graft on the quince. He takes the reluctant variety, whatever it may be, grafts it on some other pear—the Bartlett for instance—then cuts the latter from its parent tree and grafts *that* upon the quince. Growth in both eions follows at once, he claims, and he gains at least a year's time by it. He says also that this method improves the habits of some straggling varieties—the Rostiezer for instance—and that the Seckel, double worked on the Bartlett, will grow much faster than when grafted directly on the quince. He has practiced this for twelve years, he says, and now first makes it public.

Photographs and Fruits.

FROM Gov. R. W. Furnas, of Nebraska, we have three very fine photographic plates. One represents the buildings upon the fair grounds of the State Agricultural Society; the other two, from different stand-points, the display of fruit made by the State Horticultural Society in connection with the last (1872) fair of the State Agricultural Society. If these photographic views tell the truth, the display of fruit must have been magnificent on the occasion. We expect to see Nebraska at the "Hub," next September, with a collection of Pomona's gifts that will astonish the natives.

S. R. Moore, West Zanesville, Ohio, favors us with specimens of a small apple labelled "Little Pearmain," according to Elliott a synonym of Bullock's Pippin. Warder and Downing make it a synonym of the American Golden Russett. The apple is small, but has decidedly redeeming qualities. In describing it, we can do no better than to copy from Elliott:

"Size, small to medium; form, roundish, ovate, tapering much toward the eye; color, generally rich golden yellow, overspread with soft russet, and in sun a marbling of red; stem, slender; cavity narrow, regular; calyx, small, closed; basin, shallow, sometimes furrowed; flesh yellowish, tender, juicy, almost buttery, delicate, sprightly; core, large for size of fruit; seeds, full, ovate, pyramidal. Season, December to March."

Downing truly says of its quality: "One of the most delicious and tender apples, the flesh resembling more in texture that of a buttery pear, than of an ordinary apple."

The White Grub.

ED. WESTERN HORTICULTURIST:—Seeing an inquiry in the 12th No. of the HORTICULTURIST, in regard to White Grubs, reminded me of a bit of experience in my own observations of the pests, which I now give for the benefit of the inquirer or others.

Some three years ago, I planted a row of Early Rose potatoes, and wishing to make the most of them, about the time the sprouts were coming through the ground, I made a trench five or six inches deep close along the row, and put in it a liberal quantity—say two or three inches—of fresh hen manure, and covered it with soil. Sometime during the summer, while hoeing the potatoes, I happened to dig into the manure, and to my surprise found some twenty large, plump, white specimens of the "rascal" luxuriating in the trench of manure, while the potatoes, at digging, were unharmed.

Further: the fact is patent to all farmers here, that the white grub will not injure growing corn, if the ground has a good coat of fresh stable manure plowed under before planting. They seem to prefer to work in the manure, and perhaps live on it. Cannot this fact be turned to good account by furnishing the "rascals" such material underground among strawberry or other plants?

Carthage, Ind.

THOMAS T. NEWBY.

Grafting the Grape on its Laterals.

ED. WESTERN HORTICULTURIST: Your method of grafting the vine as described in the *Pomologist* some months ago, is correct in accordance with my experience, but I have improved a little on that. I find it unnecessary to graft at the root of the vine and often inexpedient, but more successful to graft the side branches or laterals of the vine. Two years ago I laid down two wild vines sixty feet in length each, buried them in a trench ten inches deep, brought up their side branches above ground suitable distances apart for grafting. I then set fifty Iona grafts on those branches just below the surface of the ground. Every graft lived and has made strong, healthy vines. I left five of the branches until the 20th of July, and then grafted with Delawares. Two of them failed to grow, the other three grew and made about as much growth as the Iona vines that were set early in the spring. Vines can be propagated in this way with as much certainty as by layering. I have found that cions of the Delaware do not take so well on the Clinton as they do on the Wild or Taylor's Buttitt. I have not tried grafting on the Concord; Salem Iona, and Allen's Hybrid, take well on the Clinton. I presume Concord stocks would be equally good. The main object is to have hard, healthy roots for stocks. I have found very little difference in the different modes of setting the grafts.

Freeport, Ill.

P. MANNY.

P. S.—I am reported in some of the papers to have said at the meeting of the Northern Illinois Horticultural Society, at Freeport, that June was the best time to graft the grape. I said no such thing, but directly the reverse of that. I find early spring the best time, and that as the season advanced; the chances of success diminished. After the 20th of June, I found it too uncertain, though some will live. I once set a few cions the 20th of July, only about one-half grew. I used old wood of the previous year's growth. I at the same time set a few cions cut from the same season's growth with better success.

Picquet's Late Peach.

THIE Rural Alabamian highly extols this peach for the South. Says: "It is the evidence of all who have fruited it, that it has no compeer. Large to very large, bright yellow, and of the most excellent quality, it cannot fail to become one of our most profitable market peaches, ripening as it does when good peaches are scarce, and the trees being fine growers and abundant bearers. Season, first half of September; freestone.

"This magnificent peach originated in the orchard of Antoine Picquet, Bel-Air, Georgia. In 1858 we cut the grafts from the original tree, which died the following year. After fruiting it for four consecutive seasons, we put it in the trade, feeling assured at that time that it was destined to become a most valuable market peach. In this we have not been disappointed, and it is a source of congratulation to us to have added this peach to our list of superior fruits and saved it from destruction. It ripens with the *Smock*, to which it is immensely superior in size, appearance and quality. The *Salway* also matures at the same time, but is also inferior to the Picquets, from a limited experience in fruiting the former and from reports of others who fruited both varieties side by side."

Do Apples Reproduce their Like?

ED. WESTERN HORTICULTURIST: Do apples ever reproduce the identical same fruit from seeds, is a question often asked, some asserting they do, others denying. That they do occasionally reproduce the same fruit from seeds, an exactness in all parts, is a fact I have seen more than once. Whilst at home with my father, he set twenty-five trees, all from seed of the Milan apple, and all came true to the parent tree, in tree, fruit and time of ripening; and last year had a seedling cherry crab to come into bearing a complete representative of the parent; but such, I admit, is not often the case, not even bearing a resemblance in tree. We have young trees grown from crab seed, some are crab in tree, others apple; and others grown from carefully selected apple seeds; that perfect apple and perfect crab trees are found in same lot, showing a variation from the parent in tree, as well as in fruit, is possible. The seeds of the apple and crab all grew close together, and the trees, as far as they have borne, show crab fruit on all trees showing crab, and sorry to say on nearly all the balance, though a little improved in size and flavor over the fruit of any of the regular crab trees, and indeed over any crabs we have yet grown, but none a really good eating apple. Have some hundred more fine seedlings to come in yet, on which will report from time to time.

Excelsior, Minnesota.

PETER M. GIDEON.

N. B.—Would add, pears dead or badly damaged, and all varieties of the apple hurt, more or less; but few apples this season. Grapes not covered, all dead, the smaller fruits generally sound, I think, owing perhaps to the great depth of early snow-fall. The winter was cold, beyond any precedent known to oldest settlers, the snow not all gone yet—three feet of ice on the lake, March 30.

Manure for the Grape.

THE following, taken from a work on Manuring the Vineyard, is good advice. We are of the opinion that the application of a compost thus made, will benefit a vineyard, however rich or poor the soil may be.

“It is neither desirable nor necessary to impart to the vine too much luxuriosness. As a general thing, not enough importance is attached to a rational method of manuring, often required to assist the growth of the vine, though an excessive system of manuring will delay the ripening of the grapes, and impair the quality and quantity of wine produced.

“It is very important that the manure used should not only furnish to the vine nourishment, but also impart to it warmth. Further, no manure should be used which assists the growth of the wood, but which does not promote the yield of the wine.

“Fresh animal manure is not suitable for vineyards, as it contains too much nitrogenous nourishment of excessive richness. It is therefore advisable to mix with it masses of ground, for the purpose of properly dividing the manure. Good ground is mixed with animal manure, horn shavings, ashes, bones, sawdust, dry leaves, muck, etc., in heaps, which must be moistened frequently with water, etc., and frequently stirred or mixed together.”



Editorial Notes.

A New Departure Needed.

Mutterings of discontent have reached us in various ways from many members of the American Pomological Society, respecting its Secretaryship.

Probably at its coming session next fall, no question will be considered with more anxiety than this, and upon its solution will largely depend the future success of the Society, and harmony be preserved among the leading pomologists of the country.

The present Secretary has committed an unpardonable blunder, one deeply deplored by the other leading officers of the Society, and has placed himself in a position calculated to draw out much determined and persistent opposition.

For the past two or more years, flattered with pride of place, and an egotistical estimate of his long years of experience in fruits and pomological matters, he has run a free gauntlet with pen and speech, criticising whom he pleased (sometimes most unnecessarily, perhaps even scurrilously, without just cause), and not in the least cautious in the use of uncomplimentary allusions to many of the most influential of the editorial fraternity.

In the last report of the American Pomological Society, this egotism is carried so far as to appear in the shape of *foot notes* to several pages, wherein he asserts and re-asserts in the most positive manner, the comparative ignorance of the editors of all our Agricultural and Horticultural Journals, concerning fruits; and while not disposed to allow them either the credit or benefit derived from a possible practical experience in fruit culture, he actually intimates that they are responsible for most of the errors in pomological nomenclature, and are *ignoramuses in general*.

Only one person with "long years of experience," the great "I am," "Secretary of American Pomological Society," is supposed to have a correct knowledge of pomology, and all are expected to play second fiddle to this noble functionary.

We are supremely disgusted, doubtless the public are too, with these airs of assumption. These *foot notes* we will collate and reproduce in our next number.

By this abuse of the liberty of his position (for none of the other executive officers saw or knew of these notes till the reports were all printed and ready for distribution), the Secretary has not only arrayed himself in the most direct antagonism to the press of the country, but has thrown to them an *insult*, which every high-minded journalist will resent.

We say to the American Pomological Society, this is disastrous to you. Your officers should be in perfect harmony with the press. You should seek its co-operation. It is your most efficient ally; insult or despise them, and your own influence and success will wane.

Take a *new departure*; let your future Secretary be one whom all will delight to honor, and toward whom the press will cheerfully offer every assistance, and who will co-operate in helping your Society toward still greater success and reputation.

Our thoughts for a long time past have often turned toward one who we believe would receive the unanimous support of the horticultural world; others have lately mentioned the same name to us, and we now break the long-kept silence we have maintained for the past four years, by proposing the nomination for the next Secretaryship in the well known name of Hon. W. C. Flagg, of Illinois, Horticultural Editor of *The Prairie Farmer*. Who seconds?

Death of J. S. Downer.

The death of Mr. Downer, of Fairview, Kentucky, came to us with startling suddenness. We had enjoyed the pleasure of frequent correspondence with him during years past, both often, and in the most agreeable familiar manner, that we felt an apostle of horticulture had verily gone, when we heard he was no more.

Mr. Downer's life was eminently successful, both in horticultural endeavors, and as a private citizen; one of that band of old pomologists who have done so much good for the world, without thought of great compensation. He was one we were always glad to meet, and upon whom everybody took delight in bestowing honor and appreciation.

Truly his days were full of wisdom, and his paths those of peace.

Remarkable Growth of Plants in California.

Think of a fig tree set out when 6 inches high, and two years afterwards measuring 12 feet high, with a head 7 feet across, and trunk $9\frac{1}{2}$ inches in circumference. Yet this is vouched for by a correspondent of the *Rural Home*.

And now comes another bigger story: A California gardener has in his garden two plants of the Ricinus, planted 13th of May, and grown in one season to 17 feet. One of them had six stalks, each 11 feet high, and all 12 feet across, the trunk measuring $13\frac{1}{2}$ inches in circumference, and bearing 16 spikes of seeds, each 12 to 28 inches in length. The whole appearance of the plant is described as very showy and highly ornamental. The stalks and stems are a blood-red, the spikes a most brilliant scarlet, and the broad magnificent foliage, a beautiful metallic green, made altogether a very attractive appearance.

The Tallest Trees.

Recent discoveries near Victoria, Australia, seem to indicate that the Eucalyptus is the tallest tree on the globe. Several there growing were measured, and found to exceed 450 feet in height, and over 40 feet in circumference.

Young's Weeping Birch.

A new variety with this name has been originated in England, and is said to be very distinct from the standard variety, and much more valuable. The ordinary Weeping Birch has an erect habit, although its branchlets are pendent; but this new variety partakes more of the character of the Weeping Birch or Weeping Mountain Elm.

A Weeping Poplar.

A new Weeping Poplar has been accidentally discovered upon the grounds of a suburban English estate. It is pendulous to the utmost twig, a distinct looping tree 49 feet high, leaf smaller than the *Populus Tremula Pendula*.

The Proper Time to Prune Trees.

In a recent visit to the East Pennsylvania Experimental Farm, among other experiments, we were shown one where limbs on an apple tree of considerable size had been sawed off at different months of the year, with the view to demonstrate the comparative healing of the stump. The edges of the wound were found to heal most thoroughly and quickly where the pruning had been done in the sixth month, (June). This corresponds with sound theory, as the tree is then in its greater vigor, and the sap circulation most active.—*Practical Farmer*.

Next Meeting, American Pomological Society.

Western Horticulturists are already discussing the place for holding the meeting of the American Pomological Society in 1875, and Chicago is unanimously commended as the most fitting place. We approve the choice.

The Beatrice Peach.

A Maryland cultivator says that the peach growers of the United States are particularly indebted to Thomas Rivers, for his success in producing an early variety that is intrinsically good.

In the Beatrice we have the result of his hybridizing his very superior Early Silver Peach, with the new White Nectarine, and it is all that the grower can desire in an early Peach, being, though rather small, of beautiful color, agreeable flavor, and a sound, healthy bearer, and possesses remarkable keeping qualities, ripening, whether with Mr. Rivers, under glass, or in this country, where it has been cultivated, fully two weeks earlier than Hale's Early, which has been hitherto regarded as the earliest Peach. He has two other varieties that are second only to the Beatrice, the Early Louise and Early Rivers, both of fine quality, and in ripening follow the Beatrice in the order in which they are named; and both are earlier than Troth's Early, which is usually cultivated as the best early variety. These new varieties of Mr. Rivers' have been imported by some of our enterprising peach-growers, and will furnish the lover of this delicious fruit an opportunity to gratify their taste much earlier in the season than they could have done but for the skill and enterprise of this intelligent orchardist of England.

Successful.

The public may not be generally aware of the success of the new paper, *Ladies' Floral Cabinet*. In six months time it had reached a paying circulation, and now (only one and a half years old) has a larger subscription list than any horticultural journal ever gained in history, 17,000 copies of January number being printed to fill orders. It is still growing very rapidly.

Blood-Leaved Peach.

The *Gardener's Monthly* illustrates and describes this new peach with ornamental foliage. An account is given of its origin worthy of the days of Mythology. "The variety was found on the battle field of Fort Donelson, in Kentucky, and the Southern papers tell that a Southern general, wounded to death, sucked the juice of a peach, and threw the stone into the little pool of his blood by the side of him, from which sprang this tree with blood-like leaves." Mr. Berekman, in the *Rural Carolinian*, thus describes it. "In the early portion of the year, its foliage is of a deep blood-red color, but gradually fades as the weather becomes warmer, when it assumes a dull green appearance. Fruit medium, slightly oblong, somewhat flattened; skin white, with a pale red wart, and a few pale red spots or stripes; flesh white, juicy, well-flavored; clingstone; ripens beginning to middle of August. We would class it as very good in flavor, but deficient in size." The *Gardener's Monthly* says it ripens in Philadelphia the last of September, and that when making second growth in August, the leaves are nearly as brilliant as in spring. This may prove an acquisition for the lawn.

Van Buren's Golden Dwarf Peach.

A few years ago, quite a sensation was excited in the horticultural world by the introduction of the above peach. The interest did not attach to the fruit so much as to the tree, as on account of its dwarf habit, it was said that it could be easily protected from the severity of the winter. We believe that it amounted to but little, practically, and that no one made a fortune by raising fruit of that variety.

We have just tested a specimen—the first we ever saw, and find it quite a large, oblong peach, shaped and pointed like the Crawford's Early; of a dull yellowish color; flesh deep yellow; rather insipid; ripe the middle of October. It is a cling, and would be hardly tolerable, if ripening earlier in the season when good peaches abound.—*American Rural Home.*

Winter Pears.

The subject of *Winter Pears* we think will bear much fuller discussions in our horticultural meetings than it has done. We are not perfectly satisfied that the *ne plus ultra* has yet been discovered, although we have now some most admirable sorts. The *Beurre d'Anjou* seems to us to have one fault, it is not *productive enough*. Wherever we go we make close inquiries, and find one general remark, "it does not come up to expectations." In all else it is fine, and brings high prices. The *Lawrence* is best yet of all late sorts, but it is long in coming into bearing. The *Mount Vernon* is desirable, but we do not know enough about its bearing qualities. Even the *Beurre Bosc* is a better bearer than the *d'Anjou*, and yet it is not late enough. The *Winter Nelis* does not grow everywhere. The *Josephine de Malines*, and the *Doyenne d'Alencron*, we believe are much superior. A recent article by John J. Thomas, in the *Country Gentleman*, gives some hints about their varieties.

Very much depends on the manner in which these fruits are kept, and the fitness of the apartments for storing them. Keep the specimens in as cool a place as possible after they are gathered, and before they are placed in the cellar. A cool out-house, or a suitable apartment in a carriage house, fronting the north, answers a good purpose. A fruit room built above ground on purpose, is best where there are large quantities to be stored; or in the absence of this building, an apartment may be divided off by double boarding in some other building, and covering the boxes in which the fruit is packed with chaff or fine straw. This protection will often be sufficient until the time has far advanced into December; and there will be no danger till intensely cold weather sets in, and it will be some days before the frost can pass the barrier of double partitions and the thick stratum of chaff. After they go to the cellar, keep the apartment well ventilated and regulated to a low temperature above freezing by a thermometer.

We have mentioned the *Anjou* as the best early winter pear. If kept in a warm apartment, it will ripen in autumn, even as early as the first of October; but by keeping cool, according to the mode just mentioned, they may be had even as late as the first of the year. There will be some variation in different seasons. We have known the *Winter Nelis* to ripen fully in November, when the autumn had been warm, but the period was retarded some weeks by keeping the pears in a cool place.

After the *Anjou*, *Winter Nelis* and *Lawrencee*, the *Josephine de Malines* is the best, ripening in January, and keeping till February. *Doyenne d'Alencron* ripens about the same time, but is not quite so good in quality. It is, however, a hardy tree and good bearer, and is on the whole a desirable sort. The *Easter Beurre*, when it matures well, will keep into April, and ripen into a delicious fruit, but on the whole it is rather an uncertain sort. *Josephine de Malines* is poor in some places, but is mostly delicious and excellent. It grows well on quince.

We should not omit the name of the *Viear of Winkfield* as an early or mid-winter pear of value. It is a free grower and a prodigious bearer—the fruit large and fair. It is occasionally, when well grown and ripened, of good quality for the table, being pleasant and agreeable, although not rich; but its chief value is for baking and stewing. The principal reason why the fruit is so often poor is that it is allowed to overbear.

Carbolic Soap for Insects.

Mr. Fuller has also experimented a little with this article in killing insects upon greenhouse plants, particularly the green fly (*Aphis*), which, as everybody knows, is a great pest, and one not readily destroyed, except by fumigating with tobacco—not a very agreeable operation to perform upon parlor plants or in a conservatory attached to a dwelling. My first experiment with this soap was a decided success, operating upon two hundred roses just in bloom, and it was conducted as follows: Into a pail of warm water I put a lump of soap the size of a small hen's egg. The soap was cut up into small pieces and the water agitated until it was all dissolved, forming a warm suds. The water should not be too hot, but if not above 120° or

thereabout, it will do no harm. Into this suds each rosebush was plunged (holding the pot inverted in the hand and kept there about a half minute). After plunging, the plants were set aside for a few minutes, then dipped in the same way into clean water, shaking them about thoroughly, washing the leaves, and then returned to their former place in the house. Whether it was the soap or warm water that killed the green fly I will not say, but there is one thing certain, they are all dead.

The Best Roses.

A few months since, a circular was addressed to the principal nurserymen and florists of Rochester, N. Y., by the editors of the *American Rural Home*, asking for the names of a dozen of the best hardy roses, easily grown, free blooming, and representing as far as possible the different colors, shades, tints and merits. The list was responded to by seven parties, and the votes appeared in the following order of popularity:

Gen. Washington has the suffrages of all.....	7
Caroline de Sansal.....	6
La Reine.....	5
John Hopper.....	4
Victor Verdier	4
Gen. Jacqueminot.....	4
Baronne Prevost.....	4
Anne de Diesbach.....	3
Madame Alfred de Rougemont.....	3
Triomphe de l'Exposition.....	3
Sydonie	3
Madame Victor Verdier.....	3
Madame Plantier	3
Perpetual White.....	3
	—
	14
	—

A brief description of each variety is also given by same journal.

General Washington.—Brilliant rosy carmine, approaching to scarlet; very large and fine form; free bloomer.

Caroline de Sansal.—Clear delicate flesh color, becoming blush; large and full.

La Reine.—Brilliant glossy rose color; very large; cupped and beautiful.

John Hopper.—Deep rose, with crimson center; very large and fine form.

Victor Verdier.—Clear rose, globular, fine form, free bloomer.

General Jacqueminot.—Rich fiery crimson; abundant bloomer. One of the best for bouquets, but casts its petals too soon for a garden bloomer.

Baronne Prevost.—Deep Rose, very large and fine; free bloomer; vigorous grower.

Anne de Diesbach.—Bright rosy carmine; beautiful form; very large and double.

Madame Alfred de Rougemont.—Pure white; large and very double; profuse bloomer.

Triomphe de l'Exposition.—Rich deep red, shaded with crimson; flowers in large clusters.

Sydonie.—Light pink; very large and full; fine in autumn.

Perpetual White.—Pure white; blooms in clusters.

All but the last of these are Hybrid Perpetuals, a class blooming at intervals, from June to November. The last is a Perpetual Moss, a class that is also hardy, blooming at intervals through the season. Those who wish to add to this list another Perpetual Moss, will find Salet a good one. Those who wish climbers, will find Baltimore Belle and Queen of the Prairies, the best of the class. And those wishing a yellow rose, will find Persian Yellow the best of that class.

Hydrangea Dentzifolia.—New Hardy Shrub.

This plant appears to be perfectly hardy, as we had several plants out last year that were entirely uncovered, and which wintered perfectly, not even a tip was killed. It has just opened its showy flowers, which are pure white, but, like others of the same family, afterwards change to a pink. The flowers are very persistent, staying on often from August to October. Its native country is Japan, from which it was introduced to this country in 1865.

It is of somewhat spreading growth, often two or three feet over, and not more than a foot high. The flowers are borne in panicles, six inches wide, but mostly longer than wide.

It roots very readily from layers; when once it becomes reasonably well known (if it should prove so entirely hardy), it will ultimately be met with as commonly as the lilac.

The old golden Hydrangea (*hortensis*) will not stand our winters, although we have seen it do so in the neighborhood of New York.—*Edgar Sanders, in Prairie Farmer.*

Horticultural Notes.*The Para Squash.*

This is one of the latest and most important additions to our list of winter squashes, and we extract a few remarks concerning it from an article of a correspondent of the *American Rural Home*:

It is a native of South America, taking its name from the Para river, a large river situated in the northern part of Brazil. It is a vigorous grower, its habit resembling the bush squashes in some respects, although the longer vines attain a length of six or eight feet. The vines are very thick and strong, branching like a bush squash, and growing erect till they reach a height of two and one-half or three feet. One vine which grew alone in my garden measured nearly two inches in diameter, just above the surface of the ground. The leaves are smoother than the Hubbard, and of a lighter color.

The squashes, which are about one foot in length, are of a light green color while growing, gradually changing to a dark bottle green when ripe, some specimens having a little yellow on the under side; ribbed, skin smooth and thin, and can easily be cut with a knife. The flesh is fine-grained, and when cooked is sweeter, and not as dry as the Hubbard, and of a peculiarly agreeable flavor. It is equally good, either baked or boiled. They are good keepers, and are very productive. I counted upon one vine five squashes within a distance of three feet of each other.

Although a native of the torrid zone, and coming from nearly under the equator, they have ripened here perfectly the past season, notwithstanding the fact that we have had a hard frost that killed vines of all kinds much earlier than usual. On the whole, I think it should be classed as one of our very best squashes, being of very good quality, a good keeper, very productive, and excellent in every respect, being worthy of a place in every kitchen garden.

Summer Pruning Small Fruits.

The *Vermont Farmer*, in an article urging the necessity of attending to this important operation, says:

Summer pruning does away with the necessity of staking and tying raspberries and blackberries. It does more than this: it increases the amount of fruit, makes it of a better size and flavor, and gives the canes a form and degree of hardness which enable them better to resist the severity of Northern winters. Without summer pruning, these small fruits cannot be grown with profit or with any degree of certainty of yield. A plantation neglected in this particular would soon run out.

The Black cap raspberry should be checked in its upward growth when about two or two and a half feet high. The work may either be done by pinching or cutting. If the patch be large, a convenient method is to clip the tops of the young canes with a common corn knife, and the work can be done about as fast as a man can walk along the rows. The upward growth being thus checked, the side branches start out vigorously, and push out long and assume a drooping form. A new upward growth will not usually begin again, but in case it should, the cutting or pinching must be repeated. We should not check the growth of the side branches, unless they interfere with cultivation the first season, but shorten them early in the spring of their bearing year.

The Antwerps and their class should also be summer-pruned when the shoots are about the same height. It is an object to promote the growth of side branches, as on these most of the fruit will be born. Thus shortened, the canes become stiff enough to support themselves in an upright position without the use of stakes.

Blackberries must be shortened in as above described, if the grower gets any profit or comfort in trying to produce this fruit. It produces the same effect as on the raspberries, viz: causing the side shoots to grow with vigor, and these must be severally shortened next spring. With this management, staking may be entirely dispensed with, as indeed, it is in plantations where these fruits are cultivated on a large scale for market.

Too many new canes should not be allowed to grow in a hill. Three or four of the Black caps are sufficient; four or five of the Antwerps and this class, and two or three of blackberries. If more appear they should be cut away.

Cultivation of Nut Trees.

Little attention has thus far been given, says the *Oneida Circular*, in this country, to the cultivation of nut bearing trees. It is, however, said by some, that the yield of nut orchards in nuts and lumber would pay a good percentage on the capital invested in them, especially if the trees were planted on rough, hilly land, suitable for meadow and the production of crops requiring much hand culture.

For the purpose of showing that those who may engage in the enterprise will not necessarily have to wait a lifetime in order to see the fruits of their labor, I will state a few facts in regard to an experiment on a small scale. Eighteen years ago, one dozen trees each of the hickory nut and the black walnut of moderate size were obtained from a nursery. The trees were mostly set out by the roadside, in rather a hard, gravelly soil. They received no culture, and for a year or two success seemed doubtful. However, all but one survived, and finally became established. The hickory trees have grown nuts for the past two years. One tree, a year ago, produced three and a half barrels of nuts, as they came from the tree. The trunks of some of these trees measure one foot in diameter near the ground.

About the same time that these trees were set out, some chestnuts were planted in the seed bed. From these, trees have been produced that have borne nuts the past two years, making about sixteen years from the seed to the bearing state. But it is by no means necessary to wait even this length of time for results; trees can now be obtained at the nurseries by the thousand, of suitable size for planting. These, if the work has not already been done, may be grafted, taking cions from bearing trees that are known to produce the largest and finest nuts. This process would considerably shorten the time before bearing, also secure the all-important end of producing the most valuable nuts.

Now as to the market value of nuts:—It is known that the price of edible nuts has steadily increased as they became more and more scarce, until at the present time our native chestnuts sometimes bring in the market the sum of ten and twelve dollars a bushel; hickory nuts, four dollars; while Spanish chestnuts, I am told, are worth from fifteen to eighteen dollars a bushel. The latter variety may also be

grafted on our native stock if desirable. It is not as hardy as our native chestnut, and would require the advantage of more favored localities.

Choosing Dwarf Pears.

In choosing Dwarf Pears, select those that have been budded close to the ground, as when they are replanted, the stocks should be buried an inch below the pear scion, which prevents the attacks of the quince borer. If a long stem has to be buried, the usual consequences of deep planting result, and do as much injury as the quince borer. Also in choosing, select, if possible, plants that have been raised from cuttings, for layered stocks have always a long deep tap-looking root, on which dwarf pears do not do well. If we have to use such dwarf pear trees, better shorten some of the long trunk root before planting. Never plant what appears to be the stem of a tree far beneath the surface, under any circumstances, for disease will be most probably an ultimate consequence.—*Gardener's Monthly.*

Raising Fruit in the Shade.

A writer in the *Fruit Recorder*, contributes the results of experiments in raising fruits in the shade:

A parishioner objected to planting raspberries because he had no place for them except the north side of his barn.

In 1863, I planted two rows of raspberries about sixty feet long, and three feet apart, in the rows directly west from a two-story building, and under the north side of a tight board fence, so that they got no sun till afternoon, and not more than two or three hours of any day; and from that plantation we have picked two bushels in a season of Red Antwerps and Brinckle's Orange, that were the admiration of our neighbors.

The finest Black-caps I ever raised, were directly under the north side of a high barn.

I have raised a full crop of strawberries—Russell's, in the same location, and thus lengthened out the strawberry season, as they ripened a week latter than those that had the full benefit of the sun.

Successful Culture of Strawberries.

In response to a question from an anxious small fruit grower how to manage his strawberries, the *Western Rural* gives him this byway, as a table of commandments:

Set out in the spring good strong plants, upon deeply plowed, and if possible, new land, in rows three feet apart by twelve inches in the row. Keep the ground thoroughly clean, and the runners cut off as fast as they appear during the season. Do not allow them to bear the first season, since the crop will not pay you, and it will weaken the plants. Pinch off the blossoms as they appear.

About the time the ground freezes up, cover the bed about three inches thick with slough hay, or some other clean material. When the vines really show signs of growth, *not before*, uncover the plants along the rows, allowing the mulch to remain between the rows, until after they have fruited.

Having done as above, you should get a full crop of the finest berries. The mulch not only keeps the soil moist, and the berries from contact with the earth, but its principal value in the spring, besides protecting the plants in winter, is to keep back growth early in the season, thereby retarding the blossoming until danger of frosts are over.

Many persons imagine that it is better to let the runners grow, but with some varieties this will be the case to such a degree, as to prevent their fruiting, and such vines are always non-paying. It really costs less to clean and pick the crops under the hill system, than under the old fashioned one of letting them run.



E. SEARS

PLAN OF COUNTRY COTTAGE.



PLAN OF FIRST FLOOR.

THE Horticulturist

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A Prussian Seed Farm.

By Josiah Hoopes, in "Christian Union."

A N admirable feature in the commercial gardens of Europe is the clustering of "specialties" in the exact spot where each is the most certain to succeed. In fact, years of constant trial have so fully decided this question, that now one always goes to Haarlem to see hyacinths, tulips, and crocuses; to Orleans, France, for young nursery seedlings; to the suburbs of Paris for gladiolus and roses; to Ghent for hardy azaleas and many kinds of succulent plants; to the suburbs of London for geraniums and florist's flowers, as well as for rhododendrons; to Edinburgh for seedling evergreens; to York, England, for ferns and alpines, and to Erfurt, Prussia, for flower seeds. Of all the many beautiful sights which gratified me whilst studying European horticulture, none gave me more real pleasure than did a visit to the last named locality. Although there are several distinct business firms at Erfurt, I was so much pleased with the exceeding neatness and perfect order displayed in every department of the grounds of Ernest Benary's celebrated establishment, that I have selected it as the "text" for my present paper.

The extent of the seed trade in and around Erfurt is perfectly enormous, hundreds of acres being devoted to the business, and hundreds of hands used during the various processes of growing and collecting.

They speak there of shipping flower seeds, not only by the hundred-weight, but by the ton; think of that, my rural readers, when you purchase your tiny paper of mignonette and aster; it is but a drop in the bucket. Many firms in the vicinity are shippers on their own account, but the large majority of the growers contract with the few leading firms to supply them with specialties—one raising balsams and asters, another verbenas and pansies, and a third, perhaps, hollyhocks, carnations, etc. Occasionally a leading seed house will have his Ten Weeks' Stock or asters grown by several parties, so that failures may be avoided, and sometimes particular growers inva-

riably excel in one flower, as, for instance, the carnation, when it will receive some one's constant care.

At Benary's establishment we commenced with his home-grounds, where there are several commodious and exceedingly neat greenhouses devoted to the rarer seeds. The first we found filled with the finest strains of fuchsias, then two houses of gloxinias in full bloom, all raised from seeds of his own saving. Two houses of coleus, embracing all the finer kinds, were then examined, and adjoining them, a house, 120 feet in length, contained about 10,000 plants of the Chinese primrose, in great variety of color. All of these plants were grown for their seeds alone. These houses were shaded with a very convenient and sightly material, made from slender wooden strips, fastened together by means of strong twine, and painted green, somewhat in the style of old-fashioned window-blinds. Beautiful plants of humea purpurea with their long, delicate, purple plumes, made a fine show in the open ground, and I think it will prove available here as a striking lawn-plant, being more showy than the old humea elegans. Platforms with roofs are greatly in vogue for raising many kinds of plants, as the free circulation of air is conducive to the perfection of seeds; one of these was filled with the finest double-flowering petunias I had ever seen, one particular flower measuring four inches in diameter, and another was especially striking on account of its peculiar marking—pink with a rich green border.

Every shade and color appeared to be represented in the collection, including so-called selfs (or flowers of a single color) stripes, mottled, green-edged, etc. Adjoining the above was a similar house filled with the single varieties, and these had all been dusted with pollen from the double strain, the stamens of the former having been previously removed. About thirty per cent. of the proceeds are expected to produce double flowers. The collection of shrubby calceolarias was likewise especially noticeable for their uniqueness in habit and color. Here also was a table covered with the new Phlox Drummondii cardinalis, of a bright red color, exceedingly striking, and valuable for ribboning. A bed of "Forget-me-not" (*myosotis azorica celestina*) introduced to notice two years since, attracted attention from its beautiful tint and free-flowering habit. Beds of daisies, the seeds of which yield a large percentage of double-flowering plants, were, as they always prove, very pretty. In one of the houses devoted to mixed plants, we noticed a number of the newer kinds of Begonia, now in use for their flowers, and which come singularly true from seed; I allude to the *B. sedenii*, *Veitchii*, *boliviensis*, and other allied varieties. A showy species of Solanum, *S. pyracanthum*, with yellow or orange colored ribs to the leaves, and spines of the same tint, will, I presume, prove equally as showy with us, in a group of subtropical plants. *S. marginatum*, with silvery-white foliage, is also charming for the same purpose.

Another pretty little thing, *rivina humilis*, covered with its scarlet berries, will also prove very useful. A bed of the comparatively new species of Pentstemon—*P. nudicaule*, from California, with its tall panicles of scarlet flowers, greatly attracted our attention. This plant was discovered a few years since, I think, by Doctor Kellogg, of San Francisco, who kindly furnished the writer with seeds; they grew and lived over one winter, but, through carelessness, died afterward. It is hardy, and one of the most conspicuous herbaceous plants now in cultivation.

Who does not know, and consequently love, our gaudy Cardinal flower (*lobelia cardinalis*), with its tall spikes of dazzling scarlet? Here, in Benary's collection of choice novelties, was a long bed, filled with a superb variety of the above, remarkable for its rich purple leaves, and in every way a perfect "gem." They were ten years in "setting" this sport, *i. e.*, in making it come true from seed—a trial of patience which none but an enthusiastic lover of flowers can appreciate. One of the enclosures belonging to this firm, situated a short distance outside the walls of the town, is devoted to the raising of cauliflowers and celery. Erfurt seed of these are celebrated wherever they are grown. Ten acres were in the enclosure, and the whole area was laid out in beds, neatly edged with closely shaven grass. Between the beds were streams of pure spring water, the ditches being ten feet in width, where a sweet water-cress was luxuriating. Laborers, with tin-pans fastened to long poles, were busy dipping up the water and irrigating the plants. The Erfurt Dwarf cauliflower is considered the standard of excellence, and is very low, with large snow-white heads. About 100,000 are annually grown by this firm alone, and their cultivation is attended with no little expense and care. The beds are raised about two feet high, and thoroughly enriched with well-rotted horse-stable manure. The seeds are sown about the first of April, and the heads are fit to cut by the middle of July.

In September, seeds are again sown for forcing. Prices here are very low—forced heads usually bringing 6d. each; by midsummer, they sell for sixpence, but later in the season the price somewhat advances. Last year prices were exceedingly low, fine heads selling from 4½d. to 5d. After the cauliflowers are cut, the ground is planted with celery, and with such excellent culture as they here receive, one can imagine the immense yield. We were informed that 150 acres around this city were devoted to cauliflower-growing alone. After leaving these grounds, we rode to another lot, where we saw thirty frames, filled with enormous cockscombs, of every shade of color, making a rich show. Carnations in full bloom, then attracted our notice, not only on account of the great diversity of color and markings, but for the delicious perfume as well. On a covered platform were neatly arranged 10,000 pots, with these very healthy plants, carefully trained to stakes, and filled with bloom. Close beside them, about one acre of seedling plants, all double, were growing in the open ground, and completely covered with blossoms. Only ten per cent. came single, and these had been immediately taken out and destroyed. Three men attend exclusively to the carnation department, and they are constantly employed during the growing and seeding seasons. Another crop here, rising with the former, is the immense stock of mignonette. As an instance of the amount of its seed grown by this firm, fifty hundred weight is annually gathered and sold. The Ten Weeks' Stocks require very careful attention if the finest strain of seeds is required. About seven plants are grown in a six-inch pot, with a small percentage (two or three) of the same, producing single flowers; the pollen from the double blooms then fertilize the single, and thus ensure in the succeeding generation a satisfactory amount of double blossoms. The pots, of which 200,000 are now in use, are placed on narrow shelves, the latter one above another, until the structure is about twelve feet in height, and at the top covered with a sloping roof. The seeds of "stocks," or, as they were termed by old gardeners, "gillyflowers," will produce from fifty to eighty per cent.

of double blossoms. In one enclosure, we noticed a large wheel had been recently introduced for the purpose of forcing water to an elevated tank, whence it was distributed all over the grounds; thus one man can now irrigate as much surface as in former times three men accomplished with buckets.

The garden of four acres devoted to testing vegetable seeds is unique in its way. Here were specimens of 3,400 varieties growing, each in its little division, carefully labelled with name and date of sowing, so that customers could not only have an opportunity of making the acquaintance of each, but also ascertain the germinating quality of the seeds, and the percentage that grow.

About eight acres are covered with Balsams (Lady-Slippers, my elderly friends), of almost innumerable shades of color, as well as a great diversity in height. These were set about eighteen inches apart, and the ground preserved scrupulously clean. They require, possibly, more water than any of the so-called "florist's flowers," and consequently the surface of the soil had been daily drenched. An exceedingly pretty Feverfew, named *Mabricaria eximium grandiflorum*, was here in perfection, with pure white flowers, neatly quilled. *Phlox Drummondii*, grown in four-feet beds, was of course a leading feature (ten or twelve acres covered), and the striking difference in color was especially remarked. A variety—William the First—was very distinct, maroon ground, with a white stripe on each petal. In the vast collection of pinks I was particularly struck with the showy *Dianthus laciniatus*, occupying about one acre. These were not only double (only one-fifth single originally), but very brilliant in the various shades. This strain is said to be the finest in the market. Other kinds of pinks were here in endless profusion, and well worthy of notice, as, for instance, the *D. Hedgewegii*, covering one acre, and the Diadem Pink, about half an acre. The pansies and larkspurs richly deserve mention, but the excessive drought had told severely on their flowers. Enough remained, however, to tell the tale of beauty, and we could well imagine how attractive they must have appeared early in the season. As we approached the marigold department, embracing two acres, one must see to understand the rich golden color spread out before us. Tinted like the rays of the setting sun, from a pale lemon to a bright yellow, and then changing to a brilliant orange, no work of art could possibly equal it. In the distance, skirting the outer edge, we could see the striped French varieties, forming an agreeable frame, as it were, to the picture. I had previously been prejudiced against this simple, old-fashioned flower, but I must confess my feelings underwent an entire change before leaving this gorgeous sight. Equally as brilliant, and embracing a greater diversity of tints, was the immense collection of tropocolums, perhaps better known as nasturtiums. Several acres laid out in beds, with each kind pure and uncontaminated, side by side, produced an effect that was really grand. Could our old-time florists step into these grounds, and take a glance at the wonderful improvement made in this old-fashioned garden vegetable, they would undoubtedly be at least slightly astonished to see "'sturtions'" so very attractive.

The Scarlet Tom Thumb was probably most brilliant, and King Theodore the deepest in color. Twenty-five acres of asters was next visited, but unfortunately the flowers were only just commencing to expand, and consequently we were not able to enjoy their beauty as we could have wished; but enough were out to judge of their

perfection, and it was an easy task to imagine what they would be in a very short time. Well do I remember the Queen Marguerettes of my good old grandmother's garden, and what store was set by those tame old flowers, like the ox-eye daisy of the fields; and yet, in a few short years, the very same plant, by skill and perseverance, has been changed into the greatest perfection of floricultural beauty. This crop is a specialty here; and, in addition to the above, they have twenty acres more grown for them, making forty-five in all. Our visits to the many small places around Erfurt, where seeds are grown for this one establishment, was quite interesting. At one of these we counted fifteen tall platforms, holding thirty thousand pots of Ten Weeks' Stocks. Seven hundred feet of frames were devoted to the fancy varieties of cucumbers, and, although they were apparently filled with fruit, the owner informed us he would not realize more than one pound of seed from the lot, so unproductive are they in this respect. At another garden pansies were a specialty; and at another four thousand plants of petunias received the almost undivided care of the proprietor. This vast establishment employs about two hundred and fifty acres in all, one hundred of which are under their immediate supervision. To work this mammoth garden requires one hundred hands, the men receiving from two shillings to two and sixpence per day, and the women one and sixpence.

I could not pretend to enumerate all the very handsome flowers that arrested my attention, but in the foregoing hasty notes I have merely named such as seemed to me especially attractive. Time and space prevent me from describing the finest collection of cactaceæ, perhaps, in the whole world, as seen at Haage and Schmidt's extensive grounds near Erfurt; nor, in fact, any of the lesser gardens, of which there are so many in the immediate vicinity, but quite enough has been said already to give my readers a fair insight into what was to me the greatest treat I ever experienced in cultivated flowers.

Among the Roses.

A N ardent rose lover, whose enthusiasm bubbles over in glowing words, writes to the *Canada Farmer*, of some of his favorites:

A perfect little gem is Madame Alfred de Rougemont; my first experience in blooming this rose was with it in a pot, and it was a most charming sight. I planted it, however, in the open ground where it passed the last trying winter safely, without any protection; and has been and still is covered with its delicate and lovely roses. The wood and foliage are of a light green, the growth moderately stout, and with a free and graceful habit. The roses are small in size, quite double and full; when newly opened they are most handsomely capped, white with a delicate tint of flesh color, deeper towards the centre. It is a most abundant bloomer, and though by no means showy, is yet exceedingly attractive in its modest loveliness. For bouquets in which light colors predominate, for wreathing the hair or set singly as a loop to gather flowing tresses, it is perfect.

Among the brilliant, dazzling ones I placed in the foremost rank the Duc de Rohan. Free and vigorous in habit, its leaves thick and massive, yet glossy in their dark green, the entire tree puts on the air of one of noble blood, the roses are large,

double and full, and when newly opened are of a dark rich red brilliantly shaded with vermillion. The petals are of good substance and have that rich velvet-like appearance, which gives such fullness and depth to the glowing color. Apparently perfectly hardy and an abundant bloomer, it will take a commanding position in all our choicest collections.

Another of these dashing showy fellows is Lord Macauley. One would hardly expect the staid old historian's name to have been handed on to coming time linked with such scarlet and crimson robes. But it is a lordly rose nevertheless, and seems likely to thrive well in this aristocratic land of ours; never losing a bud through all the trying weather of the past winter, it pushed forth its stout, dark green shoots when tardy summer came at last, and clothed them with thick, leathery, shining leaves, which tell of blood. And then came the roses, large, full and showy; noble blooms, opening with a brilliant scarlet crimson which changes at length to a deep glowing crimson of rare richness and beauty.

But for queenly stateliness of habit and queenlike beauty, Madame La Baronne de Rothschild is peerless among the roses. Others may blush with a more coy and maidenly grace, others may put on more gorgeous apparel and dazzle the eye with purple and scarlet, but she robes herself in glossiest satin, and draws around her the drapery of ample folds dyed with richest, yet most delicate peach-blown tints. The stout shoots, armed with ivory-like spines, have an air of matronly dignity, and the large, very large handsomely cupped, stout petaled roses, borne singly on the extremity of each shoot, and such a clear light satin rose, crown it with royal beauty. I do not wonder if rose growers in England were wild with excitement over the advent of this Queen among Queens, and that the Royal Horticultural Society awarded to her the highest certificate of merit. One thing I have noticed that is worth remembering, it bears the fierce heat of our July sun uncommonly well.

And what a charming rose, in its stainless purity, is that Boule de Neige. The blooms are small, and in the esteem of some that may be counted a defect, but to me its comparatively miniature size is one of its highest charms. Set off with a single spray of its bright green leaves, how charmingly does its snowy whiteness contrast with those raven locks. And whatever may be wanting in size it more than compensates in the abundance of roses, while the petals are rolled back so neatly one upon the other, that it well deserves the name of Ball of Snow. And last fall, I remember, what an abundance of white roses we gathered from this best of the white autumnals.

And writing of autumn bloomers, reminds me of that Prince of dark roses, Xavier Oliro. Last fall this was one of the most attractive in the bed, and now the tree is covered with roses and rose buds as though its life work was to cover itself with blooms. And such blooms they are, too, magnificent in size and beautifully full, of a deep, yet brilliant velvety scarlet when first open, and gradually changing to darkest crimson. It is an exceedingly showy rose, that cannot fail to be admired in the choicest selection, beautiful when only its thick, deep green, glossy leaves are to be seen, but gorgeous when mingling with its shining foliage, the darkly glowing roses are seen in the height of their beauty.

But I must stop. Yet I cannot stop until I have shown you the lovely Countess

de Chabrilant. Did you ever see such shell-like petals, so beautifully set in cup-like form, and so sweetly tinted with shaded pinks? Is it not a most lovely flower? and each rose is so perfect, not crowded in cluster so close that none can get room to unfold in perfection, but singly, borne on the point of each strong shoot.

Pears for the Market Orchard.

BY H. A. SWAZEY, IN RURAL ALABAMIAN.

DOYENNE d'Ete.—This handsome little pear is undoubtedly one of the most profitable in cultivation, as it bears early and abundantly, ripens among the very earliest, and the quality is unsurpassed by any other early pear. The only rival it has is the Madeleine, which, while being a little larger and a day or two earlier, is immeasurably behind it in early bearing and health of tree, in soundness, beauty, excellency and all desirable shipping qualities. After a long and extensive trial, we should plant the Doyenne d'Ete for either market or home use in preference to anything else of its season. For *immediate* profitable returns we should plant it before *any* other variety of any season—excepting the Bartlett alone. Season in June. Ships well, coloring up finely in boxes and sells at from ten to fifteen dollars per bushel. Best as a standard, but succeeds also as a dwarf.

Jefferson.—As a market fruit and for baking, stewing or preserving, there is no variety superior to this comparatively unknown sort. The tree is a strong grower, and bears early and surely, rarely or never missing a crop. This fruit for the dessert is not very desirable, but for the purposes above named, the Jefferson is certainly one of the indispensable varieties. Fruit large to very large, nearly resembling the B. Diel in shape and size, while in beauty it exceeds everything else in the pear line that we have ever seen. Color a delicate light yellow, suffused with a rich, bright carmine blush that entirely captivates the eye of every beholder. Had the flesh a like effect upon the palate, the perfection of a market or dessert pear would be fully attained.

Osband's Summer.—This is not usually classed as a first-rate market pear—because of its delicate skin and flesh, and the tardiness of the tree in coming into full bearing. But gathered early and handled carefully, as all fruit ought to be, it reaches market in fine selling order and never fails to command a high price. The tree is a good grower and a sure and prolific bearer. It blooms very late, and thus always escapes spring frosts.

Julienne.—Coming in about with the preceding or a little later, the Julienne assists in filling a gap where good market as well as eating pears are scarce. The tree is a fine grower and comes earlier into full bearing; the fruit is medium size, of a beautiful light yellow and first-rate in quality. Bears picking early, and keeps and ripens up well. Best as a dwarf.

Clapp's Favorite.—We have never seen the fruit of this new variety, but have investigated its claims to popularity so thoroughly that we are fully convinced of its value as a market fruit. We are planting it quite largely ourselves, and feel no hesitancy in recommending our readers to do so. Our trees bloomed this season

with the Bartlett—late—which is a decided recommendation. The fruit is of the largest size, of beautiful appearance, and the quality most excellent. The tree is a fine grower, retaining its foliage well through the summer, and bears early, regularly and abundantly. The most promising new variety. Season just preceding the Bartlett.

Bartlett.—Every one knows that this old variety is the best market pear in cultivation. Although not at the top of the list so far as quality is concerned, its many other unapproachable properties render it *par excellence* the market pear of the South. In any market pear orchard that we should hereafter plant, the Bartlett would make up at least one-half.

Howell.—Coming in immediately after the Bartlett, the Howell completely fills the hiatus between this popular variety and the Duchesse d'Angouleme. The tree is a splendid grower, and an early and profuse bearer, with the fruit very evenly distributed. Fruit large, regularly shaped, handsomely colored and of the very best quality. Ships well and sells at the top of the market.

B. Superfine.—Season same as the preceding, or a trifle later. Tree a splendid grower, and bears early and profusely. Fruit large, handsome, sound and excellent. Not quite so prepossessing in appearance as the preceding, but when once known will command the highest market price.

Duchesse d'Angouleme.—Next to the Bartlett, this is the most popular of market pears anywhere. Tree a splendid grower, retaining its foliage until severe frosts, and bearing heavy crops of the most magnificent pears, which always sell readily at from five to eight dollars per bushel. Fruit very large and of excellent quality. Bears picking early, and stands carriage well. Best as a dwarf, but succeeds admirably as a standard.

Glout Morceau.—Rather late in coming into bearing—otherwise a first-rate market fruit. Tree, as a dwarf, a fine grower and excellent bearer. Fruit large, fair, sound, and of first-rate quality. Keeps well, and sells as high as the Bartlett or any of the earlier varieties.

Pound.—For a very late market pear there is nothing to excel this old variety. The tree is a strong, healthy grower, and bears immense crops of magnificent fruit—often weighing over two pounds each! It is not a first-rate eating pear, but for culinary and preserving purposes there is nothing better. Season from November to January.

Where nothing is expressed to the contrary, the varieties we have named succeed well upon either pear or quince, and planters can govern themselves accordingly.

(NOTE BY ED. OF HORTICULTURIST.—The above suggestive information is quoted as a hint of information to all Southern planters who grow for Northern markets. The list of varieties is an excellent one to follow, and needs no correction from us save as to the *Howell*, which we consider too tender in flesh to be a market variety for long shipping distances; as a family fruit it is unrivalled. The Clapp's Favorite will disappoint all who leave it to ripen *on the tree*. When they gather it, it will always be rotten inside. There is only one way to treat it, viz.: gather it when green and hard, ripen it in the house, and hurry it to market.)

Value of Planting Ornamental Trees and Shrubs in Home Grounds.

THE question of actual profit in dollars and cents, in planting ornamental trees and shrubbery, is not to be so exactly shown as it has been with fruit trees, yet there is a vast profit herein, not limited to the immediate advantage of the planter or purchaser of the property so embellished. Who can have failed to note that when a piece of real estate is offered for sale, its ornamental trees and plants (if well selected and in good culture), always add a charm, which finds recognized value in the increased price paid by the buyer? Is there not profit in planting and caring for good trees and plants for ornament? Every farm and orchard, every street and highway, every public square, park or cemetery, needs its ornamental planting, and all property adjacent is increased in value where it is done. On the farm, near the orchard, and near the house, and on the highway, ornamental (not less than useful) screens of deciduous or evergreen trees, are more or less necessary (if nature has not provided in advance), as protections from wind and storm. Any farm, orchard or vineyard so protected will yield a larger annual return, and will come earlier into ripening, and consequently the value of the property be increased. A dwelling embowered in trees, is manifestly more comfortable in all seasons of the year, and must be more healthful in consequence of the equalized temperature produced thereby, and of course enhanced in value by this important aid.

It has become a common subject of remark and study—the influence of trees on climate and crops, as evinced by the destruction of our native forests by the woodman's axe. On the Western prairies we now see forests and groves springing up, and carefully cultivated to protect farms and houses from the effect of storms and blighting, hot winds, and to furnish timber and fuel. Who can tell of the great increase of value to accrue from these young groves, and from the vast lines of beautiful hedges now growing up in the West, to take place of unsightly fences?

Every homestead requires its arbor of vines, its screens of evergreen trees, and its beautiful hedge rows, for the seclusion they afford, and to keep out of view objects not proper to submit to the public eye. Every porch, and every approach to the home, claims the grateful shade of some over-arching tree, or the welcoming smiles of plants of beautiful foliage and fragrant flowers.

The healthful effects and profits of the various fruits of garden or field have their due importance, yet the sacred associations of home are by no means complete till the inviting shades of beautiful trees and the sweet scents of many tinted bushes and plants bespeak a regard for something beyond the pleasures of the palate or the profits of culture, and declare the bliss of contentment more precious than gold.

The importance of our subject is not limited to the planter or owner of the premises; it extends to the whole community. The constant, careful culture of good plants, whether for fruit or ornament, cannot fail to exercise a healthy influence on all in their vicinity as regards both taste and morals. It leads to gentle thoughts and good purposes. The soothing and refining influence of spreading trees, of flowering shrubs with delicate odors, of graceful climbers with drooping festoons and

intertwining tendrils, betoken home affection, home comfort, contentment, and must bear profit in inspiring delicate thoughts, in invigorating good taste, in ameliorating manners, in cultivating virtue.

A beautiful custom obtains in the old countries which ought to be followed with us. The birth of a child, the return of a wanderer, a notable visit from old friends, or a distinguished personage, is often commemorated by the planting of a young tree near the family mansion, which is cared for by zealous hands, and continues to be ever regarded with tender interest, and called by the name of the person commemorated. Who will question its benefit, and the value of this custom to all concerned?—*Dudley and Merrell, Genera, N. Y.*



Grapes and Raisins.

ON reading the article taken from a correspondent of the *Pacific Rural Press*, from Napa county, California, page 85, in your number for March, current volume of THE HORTICULTURIST, etc., giving his plan (which is very good, as far as it goes) for converting grapes into raisins—when we consider the abundance of fine grapes, raised not only in California, but throughout the United States, there appears no necessity for importing 300,000 cwt. of raisins into the United States annually. It seems the process employed in Europe (Turkey and Spain) should be better known to grape growers, and some things mentioned which said correspondent omits:

“Sweet, fleshy, grapes are selected for maturing into raisins, and such as grow upon the sunny slopes of hills, sheltered from the north winds. The bunches are pruned, and the vine is stripped of its leaves, *when the fruit has become ripe*; the sun then beaming full upon the grapes completes their saccharification, *i. e.*, to convert the pulp into glucose, or grape sugar, by expelling the superfluous water. This accomplished, the raisins or bunches of partially dried grapes are plucked and cleaned from defective portions, and dipped, for a few seconds, in a boiling lye of wood ashes and quick lime, at twelve or thirteen degrees of Beaumé’s areometer. This closes the pores of the skin and tends to preserve them from further decay or change. The wrinkled fruit is lastly drained, dried and exposed in the sun upon hurdles of basket-work during fourteen or fifteen days. The finest raisins are those of the sun, so-called; being the plumpest bunches, which are left to ripen fully upon the vine, *after their stalks have been half cut through.*”

Why should we not be able to succeed, under favorable circumstances, in this process of drying grapes, as well as in Provence, Calabria, etc., of Spain and Portugal, or like those imported from Smyrna, Damascus and Egypt; especially in our Southern states? Of the kinds (or names at least) of grapes, there seems to be a formidable list, with which I shall not meddle; my object is simply to throw additional light on the mode of converting grapes into raisins, as a hint might be desirable to some who may not be acquainted with the process employed.

J. S.

American Pomological Society.

Fourteenth Session, and Quarter Centennial Celebration.

WHEREAS the American Pomological Society, at its last session, accepted the invitation of the Massachusetts Horticultural Society, to hold its Quarter Centennial Celebration, and Biennial Session, in the city of Boston, in 1873;

Therefore, in conformity with said acceptanee, the undersigned gives notice that the Fourteenth Session of this National Association will be held in the Hall of the Massachusetts Horticultural Society, Tremont street, in Boston, commencing Wednesday, September 10, 1873, at 10 o'clock A. M., and continue for three days.

All Horticultural, Pomological, Agricultural, and other kindred associations, in the United States and British Provinces, are invited to send delegations, as large as they may deem expedient, and all persons interested in the cultivation of fruits, are invited to be present and take seats in the Convention.

The coming session will be especially interesting, commemorating, as it will, the termination of the first quarter of a century of the existence of the Society, and it is believed, will be one of the most important and useful that the Society has ever held. On this occasion there will be brought together the best cultivators and fruits of our widely extended country, when may be examined and compared, the fruits, not only of the cooler climes of the North, but of the South, the West, and the Pacific Slope. It is therefore very desirable that every state, territory, and province of America should be fully and ably represented in this convention, thereby promoting the advancement of one of the great resources of our national wealth—the extension and perpetuation of the amicable and social relations which have heretofore existed among the members of the Society—and the diffusion throughout the land, of our deliberations, for the benefit of our constantly expanding territory.

It is therefore hoped that there will be a full attendance of Delegates from all quarters of our country, thereby stimulating more extensive cultivation by the concentrated information and experience of cultivators, and aiding the Society in perfecting its catalogue of fruits. This will be one of the prominent subjects which will come before the Society, and we therefore respectfully urge the various State and Local Committees which have not already responded to the circulars of P. Barry (Chairman of the General Fruit Committee, Rochester, N. Y.), to do so, with such information and lists of fruits as may aid in determining what varieties are best adapted to their several localities.

At this session the Society will appoint the place for its next meeting, and also decide what action it will take on the invitation to participate in the International Exhibition at the Centennial Celebration of 1876, in Philadelphia, and it is respectfully requested that members come prepared to express their opinions in regard to this subject.

Arrangements will be made with Hotels, and as far as possible with the various railroads, terminating in Boston, for a reduction of fare, and of which notice will be given in a future circular. Similar arrangements can undoubtedly be made by the various delegations, with roads in their localities.

Members and Delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in

promoting the objects of the Society and the science of American Pomology. Each contributor is requested to prepare a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered, may be submitted to the meeting as early as practieable.

The Massachusetts Society for Promoting Agriculture have kindly appropriated five hundred dollars, and liberal sums have been promised by other generous patrons. See premium list.

An increased interest will be given to the occasion by the Grand Exhibition of Plants and Flowers by the Massachusetts Horticultural Society, which will occur at the same time.

Packages of Fruits, with the name of the contributor, may be addressed as follows: "American Pomological Society," care of E. W. Buswell, Massachusetts Horticultural Society, Boston.

All persons desirous of becoming members can remit the fee to Thomas P. James, Esq., Treasurer, Cambridge, Mass. Life Membership, twenty dollars; Biennial, four dollars.

Boston, Mass.

MARSHALL P. WILDER, *President.*

Orchards in Grass.

BY J. A. D.

IF a man desires fruit for himself and family only, and is indifferent as to the time he gets it, and indifferent about the quality and quantity, then he may plant his trees in grass ground and keep them in that condition, but if he intends to make the business of fruit-growing a dependence for a livelihood, he would hardly be satisfied to wait from twelve to fifteen years for results that might be obtained by good culture in seven or eight years; nor would he be likely to be pleased with the moderate returns from common or inferior fruit, while his neighbor was reeeiving high prices for a superior artiele grown on ground where fruit was the only crop.

It is true that there are soils so rich, that culture would give trees an excessive growth, and not only postpone fruitfulness, but make them liable to be injured by severe winters.

An experienced horticulturist would not choose such a soil for an orchard.

One great advantage of having the ground under culture is, that it enables the orchardist to give his trees a more uniform growth without regard to condition or unfavorable seasons. If his trees are loaded with fruit or the season unusually dry, a more frequent stirring of the surface will generally keep up the desired vigor, but if the trees are in grass and the season very dry, he is powerless to help the case and can only watch and worry to see his trees almost cease to grow, the leaves turn brown and the fruit drop for want of sustenance, and perhaps gets very little consolation as he listens to his neighbor's merry whistle while following his cultivator or harrow through his orchard, unconcerned about the weather and wicked enough perhaps to wish that everybody else believed in the "grass theory" so that he will be able to get an extra price for his extra fruit.

St. Joseph, Mich.

How to Paint Country Houses.

THE following practical suggestions were embodied in an excellent article read recently before the Farmers' Club of this city, by H. E. Colton.

Paint on the farm is no longer a luxury; it is a matter of economy, and custom or fashion has made it a necessity. Its use on farm-houses and farm utensils is a matter of self-preservation. If the farmer would add to his store of funds by taking a few summer boarders, he must make his house attractive, pleasant, and neat. He cannot do this without paint. Hence, how and with what shall the farmer paint his house? If his house is in a grove of green trees, a light buff is best; if exposed, a drab, or French gray. This for the body of the house, with window-blinds green, cornices and copings brown, light or dark, as may suit the taste. We state these shades on general principles, and the farmer who uses them will seldom fail to have a house that will be admired.

To get these shades. White is the base upon which all tints are founded. There are three kinds of white paints; white lead, oxide of zinc, and zinc lead. White lead is the most costly, and, although very generally used, and until the introduction of zinc-lead, considered the best, is really a very poor stuff, as well as very dangerous as a poison. It chalks from action of the atmosphere, and very rapidly turns yellow. Oxide of zinc is very seldom used for out-door work, as it is unfit for such use, because it cracks and peels off. Zinc-lead is an original pigment containing zinc and lead oxides. It does not chalk or turn yellow like white lead, nor crack and peel off like common zinc. It has as much body and more covering power than the best white lead. At the same time it is one-third cheaper in price. It is not poisonous to use, and when mixed in oil it does not settle, which fact is a great convenience to farmers. Hence, for these reasons we recommend it in preference to any other paint. All other paints now can be bought ground in oil.

To make a buff, take 100 pounds of zinc lead and three gallons boiled oil, and two gallons spirits turpentine. Mix thoroughly, then add yellow-stone ochre ground in oil until the desired shade is reached. Try a little occasionally on a board, as a paint looks differently in a body from when applied. If a canary yellow is required, use chrome yellow. The same color will give a canary tint to the buff. A very much admired tint is made by using a little black with the ochre.

For a drab, use a little lamp or drop black instead of yellow ochre. Pretty tints may be made by using umber or metallic brown paints.

It takes less color to tint zinc lead than white lead, and it holds the tint better. The best ochre comes from France; it gives a tint that does not fade, but shades from chrome yellow will fade. Tints made from metallic paints, as Prince's, etc., do not fade. Umber makes a pretty tint, but is apt to fade in the sun. For copings, use one of the brown metallic paints.

For window-blinds, Paris-green was formerly used, but so many accidents have happened from it that but few now use it. Green may be shaded lighter by using a little zinc lead in it. It contrasts well with almost all colors, whether pure white or a tint.

The interior of houses may be painted a pure white or tinted. In painting inside, to make a flat zinc color, use all spirits of turpentine. In fact many use more of it

on outside work now, especially when they wish to make a flat color without gloss. Oil alone, especially with zinc lead, gives a rich satin gloss. This, for the inside of houses, adds much to the appearance of the paint. To paints which do not have this gloss property in themselves, it is imparted by mixing a little varnish. Doors are usually painted oak or walnut color. This may be bought already mixed for use (called training colors) more conveniently to the farmer than to get the tinge himself. Umber is generally used.

For fences and the lower class of farm buildings the idea of the farmer is generally to get something cheap. We have always seen that the best is in the end the cheapest. The object of painting is to keep out moisture, and thus prevent wood from decay. Hence, a paint which does this perfectly is the best, even if it cost twice as much. A cheap mineral or earth paint may be very good, but when the question of renewing is taken into consideration, it may not be so cheap or so good as a paint that costs more but lasts longer. We have indicated such in the zinc lead, but for the general uses of the farm we think its mixture with some of the ochres, mineral or metallic paints would be of great use.

In oil, always get the best linseed you can. Never use petroleum. It doesn't pay in the end by a great deal. Porgie or menhaden oil is good for very common work; but on houses, or anything nice, use as pure linseed as you can buy. For farm utensils, on wood work, we would advise using the best paint; tint it if you want color; on the iron or steel, red lead is, perhaps, the best material you can get. The farmer can now, if he chooses, so great have been the improvements in the trade, buy his paints mixed up, ready for use. These save him much labor in mixing and tinting.

Grafting the Pine.

BY W. C. HAMPTON, MOUNT VICTORY, OHIO.

IN my first attempts at grafting the pine, I met with many failures (and I believe this is the case with nearly all nurserymen in the United States), until I adopted the following method under which failures seldom occur.

The process is as follows:—From the Middle of February to the end of March, I take from the open ground young thrifty trees, about $\frac{1}{8}$ or $\frac{1}{4}$ inch in diameter, preserving the roots as entire as possible; these I plant in boxes or pots, and place in a cool and rather shady place in the greenhouse, until the young growth begins to push out.

I then graft in the stem by the usual method of side grafting, much as recommended in Hoopes' Book of Evergreens. I use the strongest terminal shoots I can get for scions, which are carefully waxed over after setting.

The plant is then placed in a shady but rather warmer place, and to make the scion push its buds, every other bud on the stock is carefully removed as fast as they appear; this throws all of the strength of the plant into the scion, which soon starts with great vigor.

In a month or two when the scion is well healed in, the entire top of the stock may be removed. The great secret of success lies in *keeping all the young growth on the stock removed*, and unless you attend to this faithfully, failure will be the result. *Pinus Massoniana* and *P. pungens*, will grow on *Pinus Sylvestris* with scarcely a failure.

The varieties with two, three and five leaves in a sheath, should be grafted on some stock having the same number of leaves in a sheath.

Fruit Topics.

Winter Pears.

THE subject of "Winter Pears" is becoming one of very general interest. Summer pears, sold at prices of \$5 per barrel, very soon cool the ardor of fruit growers, and many seriously entertain the idea of grafting over their standard trees, to such varieties as prove saleable, long after the fruit gluts are gone. A young cultivator, having asked the *Country Gentleman* what varieties of winter pears will give a supply of fruit, during the two or three winter months, the answer is given as follows:

"In answer to this inquiry, we may state that we are now enjoying the Anjou, which is unquestionably the best of the season, the Winter Nelis and the Lawrence. These will probably furnish a good supply till about the first of the year—sometimes the Lawrence lasts nearly into February. Very much depends on the manner in which these fruits are kept, and the fitness of the apartments for storing them. Keep the specimens in as cool a place as possible after they are gathered, and before they are placed in the cellar. A cool outhouse, or a suitable apartment in a carriage house, fronting the north, answers a good purpose. A fruit room, built above ground, on purpose, is best where there are large quantities to be stored; or, in the absence of this building, an apartment may be divided off by double boarding in some other building, and covering the boxes in which the fruit is packed with chaff or fine straw. This protection will often be sufficient until the time has far advanced into December; and there will be no danger till intensely cold weather sets in, and it will be some days before the frost can pass the barrier of double partitions and the thick stratum of chaff. After they go to the cellar, keep the apartment well ventilated and regulated to a low temperature above freezing by a thermometer.

"We have mentioned the Anjou as the best early winter pear. If kept in a warm apartment, it will ripen in autumn, even as early as the first of October; but by keeping cool, according to the mode just mentioned, they may be had even as late as the first of the year. There will be some variation in different seasons. We have known the Winter Nelis to ripen fully in November, when the autumn had been warm, but the period was retarded some weeks by keeping the pears in a cool place.

"After the Anjou, Winter Nelis and Lawrence, the Josephine de Malines is the best, ripening in January, and keeping till February. Doyenne d'Aleneon ripens about the same time, but is not quite as good in quality. It is, however, a hardy tree and good bearer, and is on the whole a desirable sort. The Easter Beurre, when it matures well, will keep into April, and ripen into a delicious fruit, but, on the whole, it is rather an uncertain sort. Josephine de Malines is poor in some places, but is mostly delicious and excellent. It grows well on quinces.

"We should not omit the name of the Vicar of Winkfield as an early or mid-winter pear of value. It is a free grower, and a prodigious bearer—the fruit large and fair. It is occasionally, when well grown and ripened, of good quality for the table, being pleasant and agreeable, although not rich; but its chief value is for baking and stewing. The principal reason why the fruit is so poor is, that it is allowed to overbear.

Rawle's Janet.

ONE of the most remarkable sorts of apple trees we are acquainted with, is the Rawle's Janet. As a profitable late keeper few kinds excel it on good sites. Orchards for profit should be only on *good* sites, and of such orchards the Rawle's should form a good part. For heavy cropping it is surpassed by no variety we have seen, trees of it all through this section bearing to excess, and showing more fruit per tree than many more famous but less meritorious sorts.

As a late keeper few apples equal it. At this date they are plump and fresh, not one apple in fifty showing the least sign of decay.

Downing speaks of it as not having succeeded well at the North, but that it is particularly valuable for the South and Southwest where it is much cultivated, and that it puts forth its leaves and blossoms much later than other varieties in the spring, and consequently avoids injury by late frost, therefore being adapted to that climate. It is, however, becoming popular throughout the Northwest, and our observations of it in this section warrant us in the conclusion that it is entitled to rank as one of the most profitable late keepers known here. At Clinton, in this state, 600 Rawle's Janet were set in an orchard at one time, which fact shows that it is not unappreciated.

It is, however, peculiar, requires peculiar treatment and favorable circumstances. It is an excessive cropper, and on poor soil will exhaust itself when it comes to fruit. Give it a good upland clay loam on a limestone subsoil, with good culture, thorough and heavy mulching when in fruit, and it will yield more bushels of fruit than ninety-nine hundredths of the kinds usually set. If overcropped and it is not well sustained with good soil and culture, but left without care to struggle unassisted through a severe drouth without mulching, its very generosity in fruiting proves its ruin, and well it is if it can recover in another season from its exhaustion. While young, however, when the tree is not yet in fruit, care should be taken that the soil is not too fertile, and that the culture is not carried to extremes to cause the trees to put on an excessive growth that cannot mature, for thorough ripening of the wood is essential to the greatest hardiness.

It is a very fine thing in theory to have regular bearing and long-lived trees. The impression may prevail that the Rawle's is not a regular bearer from the fact of its cropping one season to such extremes as to require the next to recover. Also that it is short-lived from the same cause. We take it that the most successful orchardist is the one who grows the most value of fruit with the least expense, and we believe it a fact that the production of a bushel of apples of whatever sort, requires an investment of capital of soil and genial elements of growth of nearly proportionate value. It may be well for those who prefer it to grow a Northern Spy, and wait for its tardy crops for the sake of having a long-lived and regular bearing tree. Give us, however, instead the tree that has a tendency to bear the apples in liberal, generous crops, one that will break itself down with its full exuberance of fruit, and we will take more pride in giving it good care, sustaining feed and culture to fully support it and keep it vigorous and healthy, than we would in tinkering patiently with a tree that has to be coaxed to bear a small crop, even though they were of rare specimens, and we believe the Rawle's Janet to be just such a full cropping, generous fruiting tree, worthy of general culture.



Orchards—Pruning and Thinning.

WITH several years close observation and experience, we have come to regard late spring, and on into mid-summer, the most favorable season of the year for pruning in this latitude—varying with the season north or south. After the tree is warmed into new life from its winter rest, the sap in full flow, and the tree fairly in leaf, the sooner a wound is made, the more readily and soundly will it close over with a new growth of wood. If pruning be done, as much of it should be, at a time when the bark slips, care should be taken against loosening it, or if loosened, or bruised, to pare it off smooth. The facility with which the process of healing takes place and goes on, depends materially upon the smoothness of the rim of the wound.

Nothing like specific instruction or directions can be given in pruning. So it appears to us, for we find no operation, in the care and growth of an orchard, that taxes our judgment and skill more. To our mind, the subject can be spoken of only in a general way—that every one who undertakes to properly prune a tree, must, in the main, lean upon his own judgment. We would say, cut out smoothly all weak and straggling branches, and all that appear likely to rub or otherwise seriously interfere with their better fellows during the future growth of the tree. Take off all water sprouts, wherever found, whether springing up from the roots of the tree or out from the main trunk and branches. If trees are set very full of fruit, we do not hesitate to remove some of it with the branches, which ought to be taken out. What is left will be improved, both in size and quality. When branches, two inches or so, are removed, the wound should receive a thin coating of waxen liquid that will adhere and resist the effects of the weather. When pruning either orchard or nursery trees, late in the fall, or in winter, for cions, or for any other object, we invariably leave a stump of the limb or twig, an inch or more in length, to be shortened in close to the main stem, at our usual time for pruning. If cut close when the tree is in a semi-dormant state, the wood checks, the surrounding bark deadens and protracts the process of healing over.

TIME FOR GRAPE GRAFTING.—The *California Agriculturist* says, on the authority of several experienced vine growers, that the most favorable time for grafting the grape is when the leaves are started and the vines cease to bleed. Grafted at this period of growth, it is claimed that the cion will start into growth quicker and will be more likely to live than if the work be done earlier in the season. The cions should be of the last season's growth and of well ripened wood.

Summer Pruning the Grape.

WE think it safe to say, that, there is no horticultural operation upon which there is less correct knowledge and practice among the great mass of those who cultivate the grape, as may be found in summer pruning. Though no great skill or study is essential to a correct understanding and performance of the work, not one in a score who undertake summer pruning makes it a success. They go about the work with no fixed object, or under the guidance of anything like regular system. With a commencement somewhere they cut away, here and there, seemingly more as a pastime than for any specific purpose, exposing the fruit to the full force of the sun's rays and cold, damp night air—an exposure that dwarfs the fruit and renders it comparatively worthless.

We find a communication in the *Rural Alabamian* upon summer pruning of the vine that so completely reflects our views upon the subject, that we copy it in full. In our practice, however, we do not spare the knife in the removal of surplus wood that may chance to "harden." We can see no good reason for not using the knife—in fact prefer a clean smooth cut of the knife to a ragged pinch any time.

"As to the value of summer pruning, some are inclined to think it unnecessary and useless labor; but I find it one of the most important, as well as profitable, items connected with grape culture. Summer pruning does not mean a general pruning—cutting off large quantities of wood and stripping the foliage. Such would be disastrous to the crop. What is generally termed summer *pruning* is what I call summer *dressing* of the vines. And this dressing is done without the knife. It is simply the removal of a superabundant growth—of weak and useless wood, which, if left on the vines, would greatly injure their vigor, and to a great extent impair the full development of the fruit. Of this I am perfectly convinced from the size of the berries on some vines I did not summer prune last season. Last summer was noted as one of our dryest and hottest; not only in one locality, but almost throughout the entire South. I commenced about the 10th of May and gave the vines a thorough cleaning of all the surplus growth, leaving no shoots but those that were to take the place of the old wood that was to be cut out in the winter pruning. All the other growth was disbudded or rubbed off, leaving the young and healthy shoots as near as possible to take the place of all old and weak wood. The bearing shoots were stopped without any regard to the number of leaves on each. All were kept tied in as they advanced in growth. The crop ripened well, and there were not many green berries to be found on either the Concord or Ives, and all brought a fine price in the New Orleans market.

"I have here stated the mode of summer pruning that I have always followed, and found it to be successful with all varieties. On this mode of pruning, the crop is a sure one, provided it is taken in time. If the work is deferred later than May, it would be better not to do it at all, as the wood commences to harden, and in trying to rub off the shoots the vines are injured to some extent.

"Cutting off large canes of the current season's growth and stripping off the foliage that the sun may have fair access to the fruit, are practices that are reprobated by all good cultivators. Superfluous growth should be checked by pinching when it first manifests itself, and the direct rays of the sun should never reach the fruit."

Influence of the Stock upon the Cion.

IT is claimed by some writers that the stock has more or less influence upon the cion; and one writer upon the subject goes so far as to hold that the better the fruit of the stock, or the nearer its fruit approach that of the cion, the better will be the fruit of the latter. James Parker, of Summit, Miss., gives, through the *Rural Alabamian*, some cogent facts to prove the fallacy of such doctrine. He says: "Let us take a familiar example, and see how it works in practice. Every one knows the little, insignificant Paradise apple, and its almost worthless bitter-sweet fruit. The above position being true, what movement of amelioration could be expected from other species of apples grafted upon it? Of course none, but exactly the reverse. Is this found to be true in point of practical fact? Far from it. Budded or grafted with such varieties as the Red Astrachan, Primate, Duchess of Oldenburg, Elarkee, Rhodes' Orange, Fall Pippin, etc., the improvement is beyond all conception. The fruit is larger, the color is clearer and more brilliant, and, in my estimation, the flavor greatly improved. Now, as we cannot find any very desirable qualities in the little, knotty, insipid Paradise apple, does not this fact go far to prove that where an inferior fruit is healthy, vigorous and of near approach in point of affinity, it is equally as a stock as seedlings from first class fruit? Hardy seedlings of free and healthy growth, are all that is required, without any reference whatever to the *quality* of the fruit from which they were produced. Affinity in species and growth is the only consideration that intelligent nurserymen look to, as it is about the only one that has any practical bearing upon the case."

"I am delighted with Prof. Buckley's articles generally, and must ask pardon for differing with him upon this point. But actual experience and observation have compelled me to do so. I could show him a Hale's Early grafted on a common Chickasaw plum stock, the fruit of which would bring tears from a hungry hog's eyes, yet the fruit of the peach seems as though it were touched by the pencil of the most skillful artist, the size as large as those on their own roots, and the flavor most excellent. An Early Crawford, budded four years ago, on a wild plum stock, in the garden here, is one of the best trees on the place, healthy and vigorous, and the fruit finer and better than the majority of the Crawfords out in the orchard. These are practical illustrations of the influence the stock exerts upon the cion or tree. Here is one or two more: Plums grafted or budded on the peach stock seem to undergo a different change. It is a fact no less strange than true, that the borer appears to avoid the roots of such trees; the bark and wood of the roots seem to become harder and partake more of the nature of the plum. I find this to be a general rule. I have hunted for the borer in the roots of such trees, many times, and could find none, while in neighboring peach trees they were abundant. So much for the influence of the stock on the tree.

"But we all know the objection to working the peach on the common wild plum—it throws up so many sprouts from the roots that nurserymen are afraid to use it, lest they would soon find their grounds a plum thicket. There, are, however, improved varieties of the plum that do not sucker badly, and these make excellent stocks for the peach. As it costs fully double to raise a *plum-rooted* peach tree, this mode of working the peach will never become popular, except for particular localities, or soils, where the peach does not succeed."

California Seedling Pears.

AT a meeting of the Western New York Horticultural Society, last winter, President Barry acknowledged the receipt of several varieties of seedling pears, originated in California, and of which he said :

" In the month of November last, I received twenty-six varieties of seedling pears, raised by Mr. Bernard S. Fox of San Jose, Cal. Their appearance astonished me. Many of them were so much like some of our old, well-known sorts, that I half suspected my friend Fox of playing a joke on me. There were Bloodgood, Seckel, Lawrence, Winter Nellis, Beurre Clairgeau, Beurre Bosc, Eastern Beurre, Duchesse d'Angouleme, Beurre Superfine, Glout Moreau, and others.

" Some friends, very good judges, to whom I sent specimens, had the same doubt in regard to their being seedlings. When I began to examine them closely, and cut them, I found they were quite distinct from the sorts they resembled, and were positively new. I then wrote to Mr. Fox for some account of their origin, and he answered that they all sprung from the seed of the Belle Lucrative, sown in 1863, and had fruited in the rows where they had first grown.

" Some bore the fifth year, and the sixth over 200 bore fruit. One-fourth of the trees have not yet fruited, and for five years to come new fruits may be expected. Many of these varieties are fully equal in size and beauty to our best, and many have the advantage of being quite late. Generally speaking, they are deficient in vinous flavor, like the Eastern Beurre and others of that class. Only one or two were slightly vinous; but some were justly entitled to rank as best. A few of the largest appeared to be of inferior quality; one specimen of these, resembling Nouveau Poiteau in 1871, weighed two and one-half pounds.

" This is, beyond doubt, the most remarkable instance of success in raising seedling pears on record. And the fact that all are from seed of Belle Lucrative, and none like that variety, but like all the others growing around, is both curious and interesting, showing that the mother plant did not affect the character of the varieties. This might not have been the case had some other varieties supplied the seed. Much of this success is, no doubt, due to the peculiar climate of California. The early age of which these trees begin to bear, even in the seed-bed, seems strange to us. Mr. Fox wrote me he could have sent eighty varieties the past season.

" We may now cease looking to the Old World for new varieties of pears, and turn our attention to the Pacific coast. Mr. Fox has already raised pears superior to nine-tenths of the new varieties received from Europe in twenty years. And we shall not only get new varieties from the Pacific coast, but we must expect to see our markets filled with their pears. The supply from that source is already large."



WHAT A DIFFERENCE.—With the mercury running down in these "diggins" (Des Moines) 15 to 25 below zero, in came the following note from Brenham, Texas, under date of January 20. "Quince cuttings put out about one month ago, have *now roots* two inches long, and rose cuttings about the same. Hyacinths, crocus. etc., are coming out, and still we are having a hard cold winter for Texas. How will this compare with Iowa?"

Tompkins County King, Red Canada and Steel's Red.

ED. WESTERN HORTICULTURIST:—I find there is much confusion among people of this part of Michigan, relative to the identity of the Red Canada and Steel's Red Winter. Our best posted fruit growers contend that they are the same, while in some localities the farmers believe the two entirely different, and the same opinion has been endorsed by at least one extensive nurseryman selling trees under both names, whether really distinct or not, and also by fruit dealers who generally regard them as distinct.

I wrote to a nurseryman in Indiana some time since, and inquired if he grew the Red Canada, or Steel's Red Winter. He replied that Steel's Red Winter was the *Baldwin*, and that he did not grow the Red Canada unless it was the Hoops, or Indiana Favorite. I also see by the Agricultural Report for 1862, that the Baldwin and Steel's Red Winter are called one and the same. (I do not know who is the author of this article. In the later report, F. R. Elliott calls the Red Canada and Steel's Red the same).

The King of Tompkins is not a popular apple in this part of the State. The tree is regarded by many as not a very good bearer, nor does the fruit keep well. Judging by the call for trees under one name or the other, I should say the Red Canada was one of our most popular apples, and certainly deservedly so. The tree is hardy and productive, and the fruit is of good quality, fine appearance, and keeps well.

Adrian, Mich.

D. G. EDMINSTON.

More New Apples.

H. WALTON, nurseryman, Malvern Station, Iowa, writes March 17: "I send you an apple for a name. A friend of mine has one tree of this sort. We intended to have sent you several specimens early in the winter by our senator, when he went to Des Moines early in the winter, but failed to reach town before he left. The tree is a good grower, but a stranger to me. There are a good many apples in this country unnamed—some worthy of attention and some not. I will endeavor to favor you with specimens next fall."

REMARKS:—The apple was received, but somehow or other mysteriously disappeared before we had given it special attention. Hope for more specimens next fall.

Silas G. Goss, Border Plains, Iowa, writes of a new seedling: "I send you a few cions from the best seedling tree, all things considered—out of 175 sorts of seedlings and 17 sorts of grafted apples, all in bearing from my orchard. Tree hardy, upright grower, dwarfish, sheds its leaves early, young twigs and terminal buds downy. Tree came into bearing early and an annual bearer, stands where the seed was planted, which was brought from Portage county, Ohio, 17 years ago. Fruit medium to large, streaked with dark red, sub-acid; quality good to best; season late fall to early winter. Will send specimens of fruit next fall."

Kerosene and the Curculio.

THE readers of the *Western Pomologist* for 1871, will recollect a communication from H. Gregg, Downey, Iowa, in the use of kerosene for expelling the curculio from his plum trees, and in the course of which he said :

" Last season (1870) I rolled up woolen cloths and saturated them with kerosene and hung them in the tops of the trees, and my plums were all perfect—ripening up a very full crop last season. This season I have tried a different method with equal success. I took strips of cotton cloth and wrapped around the trunks of the trees some 18 or 20 inches from the ground, and then saturated the cloth with kerosene, and repeated the application once in ten or fifteen days during the curculio season. I neglected to put the cloths on the trees until after the curculio had commenced operations this season, consequently some few plums were stung and fell off; but I do not think one plum was injured after the kerosene was applied. The trees are so loaded with plums (August 12) that I have had to prop and tie up almost every limb. They are just beginning to ripen and look splendid."

" Now, others may not have the success with kerosene that I have. If that has saved my plums, and I think it has, it is worth a trial by every one who would save their plums at a trifling outlay."

We are sorry to learn, as we now do, from Mr. Gregg, that his crop of plums was saved only at the expense of the lives of his trees. He has no trees left; says : " Kerosene around the trunk of a tree, is death to it, but applied in woolen cloth, hung in the trees, as done the previous season, I still believe will save the plums without injuring the trees. No one else about here has the Lombard in bearing, consequently there is not much mischief done with kerosene, only what I have experienced myself, and that is bad enough sure."

The Mountain Laurel.

ED. WESTERN HORTICULTURIST: In the March number of THE HORTICULTURIST, I notice an article, " Notes from my Garden," by my old friend, Porte Crayon. If not out of place, I should like to ask him to give, through your columns, his experience in transplanting the *Kalmia Latifolia*—commonly called Mountain Laurel—a beautiful, fragrant, and hardy plant. I am anxious to obtain some of the plants, if they can be grown in this locality. I might ask for this information direct from my friend, but no doubt there are others, among your readers, who would be pleased to hear of the success of growing this much admired plant. This coming summer, three years ago, I made a visit to his place of residence, Berkely Springs, West Va., and in his grounds saw a number of plants which had been transplanted there. I am desirous to know with what success he has grown this *Kalmia Latifolia*.

St. Joseph, Mo.

A SUBSCRIBER.

REMARKS.—The Mountain Laurel is found growing so plenty in the hill and mountain pastures of the New England States as to be regarded as a nuisance. In our early days, attempts used to be made to domesticate it, by transplanting from its native hill-sides, but it seemed no more inclined to civilization than an Indian from the wilds of the Rocky Mountains. If it can be successfully transplanted, or reproduced from seed, we should like to know how the thing is done. It is a desirable plant on account of its delicate foliage and charming fragrance.

Deep and Shallow Culture of the Grape.

A VINE grower, of Pleasant Valley, N. Y., a locality famous for its fine vineyards, after some years experience, comes to the conclusion that shallow culture in the vineyard is followed by decidedly the best result. He says:

"We cultivate shallow, giving the roots the entire and undisturbed possession of the soil. By this practice, by the time the vine arrives at a proper age for fruiting, we have a root upon which we can rely for the perfect maturity of both vine and fruit, and in its proper season. Would it seem a fair inference to suppose that when the surface soil is filled with a net work of fine lateral roots that they would sooner be warmed into active life and give more strength and vigor to vine, than when by deep cultivation nothing remains but coarse tap-roots reaching down deep into the cold soil.

"It is my observation that our old vineyards that have been subjected to the yearly infliction of deep plowing are necessarily growing later in their period of ripening their fruit, year by year, for the reason that the growth in the spring is late and feeble, the leaf is weak and not sufficiently matured in season to ward off adverse influences; therefore, they become an easy victim to mildew, leaf blight, etc. My practice is to cultivate often until the last days of July, when all cultivation is closed for the balance of the season. The depth in the early part of the season does not exceed two inches, gradually working less deep as the season advances, when, by the month of July it will not exceed one inch, hoeing twice during the season under the trellis, all done with the utmost care, so as to avoid breaking or wounding any of the roots, as it is upon them I rely for the maturity of the vine and fruit. I would here say, that by this treatment I can ripen the Isabella and Catawba grapes with as much certainty as corn."

DWARF APPLE TREES.—A correspondent of the *Maine Farmer*, highly recommends the growing of dwarf apple trees. He says, in order to bear well, the trees should have rich culture, as the roots are short and do not range off for substance like standard. Claims that his dwarfs have paid for all cost and trouble several times over—would not sell one tree for what a dozen cost.

Per contra, another correspondent of the same paper writes: "I have had some experience with dwarf apple trees, but would not recommend them unless a person has not sufficient ground room for setting out standards. In my experience I find that one thrifty standard tree will yield as much fruit as half a dozen dwarf trees."

THE CURRANT BORER.—The *Pacific Rural Press* announces the appearance of the currant borer in some parts of California—and what adds to the calamity—blight and a scaly insect. "Bushes that have hitherto produced fine crops of fruit, are found to be stricken with what appears to be a kind of blight accompanied by the presence of a scale insect or parasite in countless numbers. Bushes thus affected are seen to be budless, and looking like dried sticks, standing in the midst of younger shoots that seem to be but little affected.

Flavor of Wine.

A CALIFORNIA vineyardist writes to Prof. J. L. Tracy, of St. Louis : "Can you tell me why wine, made in California, from vines not irrigated, is entirely free from the earthy flavor so much objected to in the wines of that country? Why do the roots of vines, not irrigated, penetrate deep down through the dry, gravelly soil, while those that are watered remain close to the surface?"

REPLY.—The answer to the first query seems easy enough. Nature is a wonderful alchemist, but cannot perform the miracle of making wine out of water. If the atmosphere around the vine, or the earth covering its roots is saturated with moisture, the sun will try, in vain, to elaborate sufficient sugar in the grape, or produce the true Falernian fire in the wine; but instead there will be the "earthy flavor," or something else that is "flat, stale and unprofitable," in the liquid falsely called wine.

In answer to your inquiry respecting the habit of vine roots that are not irrigated, I can only say that the penetrating deep into the arid and stony soil shows an instinct stronger than reason. The plant is evidently in search of water, and stretches down its long fibres to meet the slight moisture that rises by capillary attraction. I once knew an apple tree that stood in dry, stony ground, some fifteen feet from a foundation wall, that was sunk two feet in the ground. On the other side of the wall was a trough for watering stock, and the surface of the ground was always wet. A root from the apple tree, thirsting for water, started to find it. Reaching the wall it first turned up, but coming near the surface, it became conscious of a mistake and turned downwards again, pushing its way quite under the broad stone wall and coming up to drink just under the horse trough. Plants sometimes show more sense than people. You may see a man climb walls and go around all sorts of corners to find a glass of whisky, but where did you ever find one digging under a stone wall to get a drink of water?

REMEDY FOR BARK LICE.—A correspondent of the *Country Gentleman* relates that, several years ago, he effectually expelled the bark louse from his apple trees by placing small pieces of whale oil soap in the forks of the limbs of the trees in a way that it will be retained in place until dissolved by rain and carried over the bark. There is nothing new about this, except the method of application. Whale oil and other soaps, for its removal, are almost coeval with the appearance of the bark louse itself. Any alkaline substance, of sufficient strength, will destroy it; but with large trees, badly infested, no application of the kind is scarcely practicable. The best remedy, we know of, is to keep the trees in a robust, healthy, growing condition.

FRUIT PROSPECTS IN OREGON.—The *Willamette Farmer*, of Oregon, says: "The fruit crop this season will be light, many orchards hardly bearing enough for family use. In many localities the frost has been very severe, killing large apple trees; even town raspberries and blackberries are much injured."



Editorial Notes.

“Those Foot Notes.”

The foot notes, referred to in our last issue, can be found in the last Report of American Pomological Society, for session of 1871, as follows :

Page 80—“*The Secretary would here remark, that conductors of journals and publishers of books are utterly ignorant of varieties of fruits or plants.* It is their business to publish and sell, and look to returns on the credit of the writers who supply them matter; and it has become too noted, in all our journals, to longer be questioned, viz.: that if a journalist can obtain matter, free of cost, his position, simply as publisher, frees him from any responsibility; and hence it is that the record of a man of one year’s knowledge and acquaintance of fruit, or principle, is valued or recorded equal with him who has devoted a life to the subject.”

Also, on page 79—“*The Secretary of the American Pomological Society would like to remark, that just here comes in the fact of so much of incorrect nomenclature, viz.: it is from the egotistical ideas of knowledge, assumed by men who have had but half a dozen or so of years acquaintance with a fruit, and are void of any knowledge of it outside of their own immediate locality.*”

The italics, in the first paragraph above, are our own, and indicate the most emphatic portion to which the press take exception.

Since the publication of our editorial for May, the subject has been commented upon by various influential journals in the East and the West, and the conviction seems to be general that Mr. Flagg will be found a most useful and popular officer. We did not propose, by our May editorial, to commence any specific personal warfare against *the individual* who has proved obnoxious, by the misuse of his position; we simply gave publicity, as matters of horticultural information, to the reports which were flying around, from parties desiring a change, and indorsed the idea, believing it would be for the higher good of the American Pomological Society. We do not propose to follow the Ex-Secretary into his retirement, nor (as Mrs. Partington says) be always flinging *epitaphs* at him; we have adopted a course which is without offense—his name and his articles are strictly forbidden in any columns or pages under our control. He shall have the crush of Time’s most demolishing weapon—*perfect silence*.

The *Agriculturist*, *Hearth and Home*, *Rural New Yorker*, *Weekly Sun*, *Weekly Tribune*, are equally unanimous in the desire for change; and in each of these journals Mr. Flagg is supported. The *Western Rural* passes high compliment upon the wisdom of the change, and the judicious choice of Mr. Flagg. Doubtless other journals will soon express opinions, and the “*Tempest in the Teapot*” will have full force ere the ides of September. It is well known that not a single journal, in New York city, of agricultural or horticultural character, now prints the Secretary’s articles, uniformly refusing all of them; and in general his name is absolutely forbidden

to be mentioned in print. These statements are sufficient to show to the public the rapid change in his reputation. The following extract is from *Hearth and Home*:

"The statement of the Secretary, in his foot note, in the first place, is *false*, and in the second place, it is a piece of impertinence for the Secretary to give his opinion in an official report. In common with others of the press, we felt indignant at this insult, smuggled into an official report, and consulted with other officers about it. At the next meeting proper action will be taken.

"So far as the press of New York is concerned—meaning those, of course, giving especial attention to agriculture and horticulture—no communication, "*official*" or otherwise, from the present Secretary, is admitted.

"It remains for the Society to decide if an individual, who has placed himself in such an attitude towards the press, can any longer be useful as one of its officers."

On the same topic, the *Rural New Yorker* of May 17th, holds that the course of the Secretary is both false and injudicious, and, because so, insulting to the very class of men upon whom the American Pomological Society, through its Secretary and otherwise, has made large drafts for favors; and who have always treated the Society with the greatest hospitality and cordiality, and adds:

"If it is the desire of the Secretary to alienate this class of men from, and close the columns of their papers to the American Pomological Society, he has gone the right way to work to do it, when he inserts such a libel upon them in the Society's official report, and assumes the responsibility thereof as Secretary of the Society."

The *Western Rural* also says as follows: "If the American Pomological Society really want to recover their lost prestige, they must come down from their stilts, and commence anew, and not set themselves up as the embodiment of all the horticultural knowledge in the United States. They must not suppose that kindred societies and the horticultural journals will revolve around them as mere satellites, drawing their light from the great central luminary.

"If the Society feel inclined to have a Secretary from still nearer the setting sun, than the one they now have, the *Western Rural* can cordially indorse Mr. Flagg for that position. He is a gentleman of good scholastic and literary ability, and, as Secretary of the Illinois Horticultural Society, his reports showed close application, and an appreciation of the true interests of the Society and the horticulturists of the West.

As we conclude this subject, which is distasteful to us—to say the least—we have only to add, that the conductors of our journals throw out, every week, articles written from these very men of *one year's experience*, referred to above, because we do not believe their *trash*. We constantly seek for reliable truth and practical experience; and each journal does more for the encouragement of correct ideas, and practical application of them, in horticulture, in a single year, than a turbulent Secretary can do in a lifetime.

A Country Cottage.

The illustration, sketched in our frontispiece this month, affords a design of a simple and inexpensive cottage, which may be used for any country family, or may be adapted to serve the purposes of a gardener's cottage. The plan explains itself: No. 1 is the hall; 2, kitchen; 3, pantry; 4, sitting room; 5, closet; 6, woodhouse, or washroom; 7, porch or lobby. The main rooms, Nos. 2 and 4, may be 15 feet square.

In the 2d story, there are rooms over 2 and 4, of same size, or the floor over No. 4 may be divided into two apartments, and still be of fair width and length. The L over the kitchen, being of lower roof, will afford space for one room of moderate height and accommodations.

The cost is from \$1,200 to \$1,800, according to expensiveness of building in locality where erected. In the average of country places \$1,500 will be sufficient.

The White Water Lily.

Flower lovers might grow this lily very easily if they will follow these directions of a correspondent of *The Gardener's Monthly*:

I will describe the method I saw practiced for several years by a lady friend. The roots were procured in the lower part of New Jersey. They were kept damp during the ensuing winter in flower pots. A half barrel was obtained in the spring and the hoops well secured. It was left in "the rough" except one year, when it was much improved by a coat of green paint. The tub was set on bricks in the garden, and one-third filled with a mixture of garden earth, sand, and well rotted manure. The roots were set in this and covered. Water was added gently, and a little at a time every day or two, (so as not to disturb the earth), till the tub was filled. The handsome round leaves four or five inches in diameter, soon appeared, and filled the tub. Water was put in to supply that lost by evaporation, and during the summer several blossoms delighted us with their beauty. When cold weather approached, the water was allowed to dry off, and when nearly gone, the tub with the roots and earth still in it, was placed in the cellar, and watered at long intervals during the winter.

In the spring the roots were separated, and about half of the increase put back into the tub in a fresh mixture of earth. As they were brought out earlier (about the first of April), the blossoms were more numerous. These pure white flowers were as perfect as the Camellia, and delightfully fragrant. They close at night, and reopen in the morning. Those blooming in the tub were about two inches in diameter; but those of the ponds are larger. Near Moorestown, New Jersey, there is a very large kind, differing somewhat from these, and said to be the real Egyptian Lotus, brought from the East by a traveler.

A New Enothera.

A charming novelty has been introduced in Ireland, which in the opinion of the *Irish Farmer's Gazette*, has strong claims to be regarded as A 1, among the charms of hardy flowering plants.

We allude to a new dwarf Enothera, from Utah, which we saw in flower at Glasnevin last year, and for the introduction of which, as of so many other choice plants, we are indebted to Dr. Moore. Calling at the gardens one evening last summer, while walking round with Dr. Moore, he asked, Had we seen the new Enothera? Being answered in the negative, he led the way to the lock-up garden or sanctum, where one is sure at all times to meet something new, very rare, or of much botanical interest. On this occasion, however, all else was forgotten in admiration of the lovely little transatlantic gem to which Dr. Moore introduced us. Looked at in the quiet stillness and shadows of a summer evening's close, with its circlet of large pure white flowers, raised vertically above the foliage, on long, slender tubes, and expanding their broad fair bosom to the cooling moonbeams, this lovely plant presented an appearance altogether unique and striking.

This plant is altogether unique amongst its congeners as regards habit and appearance. The best of the latter, as for instance, E. Misouriensis, E. Lamarkiana, etc., though showy as regards flowers, are of a gawky, straggling habit, which detracts much from their value. The plant to which we now direct attention is just the opposite, being single-stemmed, compact, and dwarf, flowering when not more than 6 inches high, and at the end of the season nearly doubling that height. But to come to particulars. The stem is short, stout, some 8 or 10 inches high; the leaves runcinate, having long foot stalks, which, together with the midrib, in the lower leaves, are white, in the upper red or pinkish. Commencing at the base, the flowers issue in long succession from the axils of the leaves, and are elevated vertically over remarkably slender tubes fully a span in length, in a way to produce a beautiful effect. The flowers, as compared with the plant, are of great size, pure white, the limb of the corolla consisting of four very large obovate petals, at the base of which the anthers are placed, round the mouth of the tube, which here expands considerably, and is of a greenish-yellow color. The stigma is cruciform and considerably exserted. The above description, we are quite aware, is very imperfect,

and conveys a still more imperfect idea of this fine flower. As yet, as far as we are aware, this *Oenothera* is without a specific name. It comes from the state of Utah, North America, and was communicated to Dr. Moore by his friend M. Roezl, of Zurich. When we saw the plant at Glasnevin it promised to seed freely, and we hope ere long to see it widely distributed, and taking a prominent position in the choice herbaceous border, or cutting a figure in some phase of subtropical gardening, for which its dwarf habit and exotic appearance seem to render it eminently suitable.

Horticultural Notes.

Currants.

A correspondent of an exchange, writing of small fruits from the banks of the Hudson River, says:—In view of the large quantities of currants under way, the conclusion is forced upon me that it will not pay to plant any common sort; none but the best, and they given the best culture to bring them to the highest state of perfection. The most successful cultivator here is William Kniffin. He has picked $5\frac{1}{2}$ tons from $1\frac{1}{4}$ acres— $2\frac{2}{3}$ tons of Cherry, and $2\frac{1}{2}$ tons of Red Dutch—the former bringing from 12 to 20 cents a pound, and the latter considerably below. He paid out for picking, over \$100.

Pruning.

First Year.—Buds and grafts should be carefully looked after. Many show a disposition to fork, and unless attended to promptly, will make unsightly trees, and many of those which require more than one year to make merchantable trees, will at two years be past remedy. Side branches that threaten to outgrow the leader, should be pinched back to give them a chance to recover their position. This pruning in this latitude is usually required the last of May, and one dressing suffices for most of the plants. A second dressing should be given about two weeks after the first, to reach those not ready for the operation then.

The principle should be borne in mind that these plants require all their branches and foliage for their perfect and rapid growth, and they should be despoiled as little as possible. Pruning is a necessary evil, and should only be resorted to as a means to correct the shape of the plant.

Second Year.—The first pruning for the second year should be done before the buds burst, and may begin any time after the severest winter weather is over. The plants, whether from buds or grafts, should be pruned up to straight stems, and those tall enough to form heads should be cut back to some uniform height. Standard Apples and Standard Pears should be cut back to about three feet, owing to the average strength of growth made by the block of trees under treatment; Dwarf Apples, Dwarf Pears and Dwarf Cherries to eighteen inches; Standard Cherries, of sweet varieties, and Plums, to same height as for Standard Apples. Standard Duke and Morello Cherries should not be cut back, as they make handsomer trees left at their full height, which does not often exceed that given above for a standard tree.

Trees which, from any cause, are so ill-shaped or undersized that they cannot be brought into market with the bulk of the block, should be taken up and transplanted into nursery rows, where they can have time to make the necessary growth. They should be cut back about one-half their length at time of transplanting, and allowed to grow one season. Early the next spring, before the buds have started, they should be cut back close to the point where budded, or near the ground, when grafted plants are under treatment. Only one shoot should be allowed to grow, and the same attention is then required as for the care of a young budded plant after cutting back the stock.

Third Year.—Apple and Pear trees not tall enough to form heads the second

year, should now be pruned to straight stems and cut back to the height desired for heads. Trees of good shape with heads of the proper height, should not be cut back in the nursery, excepting the Heart and Bigarreau Cherries, and Peaches. Suckers growing from near the roots of the trees should be cut away, and in August standard trees intended for sale the following fall or spring, should have all the branches and spurs pruned smoothly off from twelve to eighteen inches from the ground.—*Heike's How to Start a Nursery.*

How to Grow the Cauliflower.

I have been successful in raising Cauliflower, and as there appears to be a want of success—so far as I am acquainted—I will give you my method of cultivation. I sow my seed in the open air at the same time I do for cabbage. I am not anxious to raise hot-bed plants, or even early plants, for I find they do not do as well in our long hot seasons as later ones. From the 20th to the 30th of May is early enough for our latitude and our deep, rich sandy soil. On the 10th of June, 1870, I spaded up a bed of the Wilson Strawberry, which had just yielded its last picking of fruit, burying the tops deep in the soil, and the same day set out the ground with Cauliflower. They did well, forming fine curd-like heads of fair size. Last season I set my plants on the 25th of May, and although the season was one of severe and continuous drouth, they did well, nearly all forming handsome heads, some of which were very large. One head cut short as it could be and closely trimmed, weighed twenty-eight pounds. These plants were set between the rows of early potatoes.—*Ex.*

Pruning Evergreens.

Little attention is commonly given to pruning or shortening in the branches of evergreen trees. Some of them naturally assume a handsome form, while others might be much improved by the operation. We do not refer to shearing into stiff geometrical figures, which are discordant to good taste, but to the thickening of the foliage without interfering with the graceful natural outline.

There are two common evergreens that bear free pruning, and may be worked into any desirable shape—the hemlock and the Norway spruce. Both of these trees, unlike most other evergreens and nearly all deciduous trees, grow well in the shade, and as a consequence, they grow well in their own shade—or in other words, the interior of the tree is not made bald by the shade of the exterior. The arbor vitæ, on the other hand, suffers from shade, and the interior of the trees and of screens are found to be bare stems and branches.

No evergreen appears well when sheared smooth like a wall, although screens and hedges are often admired when thus treated. We much prefer the more free and rich appearance of an uneven surface cut back with the knife. Such trees as the arbor vitæ can be kept well filled with foliage only by an irregular cutting back.

Evergreen trees which tend to an irregular growth, like the hemlock, may, when planted as single trees, be greatly improved by shortening in any stragglers. We find it necessary to do something of this kind on nearly every tree. A nurseryman informs us that he has only to prune his hemlocks into shape, to sell them at any price. There is a vast difference between a thin straggler, and a rich, green, dense tree, with a handsome even outline, and with a form sufficiently graceful to be free from all stiffness.—*Country Gentleman,*

Training Trees. 1

A writer in one of our exchanges says: Trees with low heads do bear sooner and better, and will bear longer than whip-stalks and bean poles. On our prairies low-headed trees are the only ones that can hold up their heads or hold on their fruit. They are naturally shaped fruit bearers, and they are miserably unpopular with that class of purchasers who know more about trees than the men who raise them. This is a most important subject, and fruit growers will never repent but once, if they

prune their trees up high. Like most tyros, we began so too, and it has inflicted one perpetual sorrow upon us. The low tree is healthier, not so subject to affections of the bark or insects, not injured by winds, the fruit is easier gathered—in fact, every reason in favor of low growth. We now try to form a head not higher than three feet from the ground, for apples, letting the branches grow out.

How to Water Plants.

From careful experiments, Mr. Mechel discovered that plants slightly watered every day often perish, and always become dwarfed; whereas a good soaking, given twice a week, almost invariably proved very beneficial. He says:

The sum of our experience in watering amounts to this—that thorough soaking of the ground two or three times a week is much better than the same amount of water applied in dribs and drabs daily, only sufficient to wet the upper surface, but not the under strata of earth contiguous to the roots. Cold spring water should, before applying it to a heated soil, be allowed to stand exposed to the sun and air for a few hours. The colder the water is, and the warmer the soil, so is the necessity of applying it in abundance; for it is evident, though we cannot explain it, that the result produced upon plants by applying cold water to the soil, when at a high temperature, unless so copiously applied as to saturate the soil completely, is fatal to tender or weakly plants, and often less or more injurious to strong or healthy ones.

Grouping of Plants.

There is no way in which the deadening formalism of our gardens may be more effectually destroyed than by the system of naturally grouping hardy plants. It may afford most pleasing results, and impress on others the amount of variety and loveliness to be obtained from many families now unused. Trees and shrubs, distinguished for their fine foliage, collected in a quiet glade; and then bright-foliage trees should be set in contrast with quieter colors, and varied with bright beds of flowers and leaf plants, or hardy flowering shrubs. Those groups should be irregularly but artistically planted. Then on a knoll plant a large bouquet of the rosaceous family—hawthorns, cherries, plums, pears, peaches, almonds, etc. There is so much that may be done to add to the bewildering beauty of a landscape by naturally artistic planting, that we are often astonished that people do not “see it.”—*Rural New Yorker.*

Transplanting Strawberries.

A good deal of care must be observed in transplanting strawberries. The ground should be well worked, all lumps should be pulverized, and the soil rich. The strawberries for garden culture should be in rows eighteen inches apart, and the hills a foot. The roots of the vines must be covered with fine soil, and after planted it is desirable that the rows should be mulched with straw, leaves, or litter. The runners should be cut, and the vines be contained in hills as much as possible. The mulching will have tendency to keep the ground moist.

Pear Stocks.

At a recent meeting of Potomac Fruit Growers' Society, Washington, the question as to the relative merits of foreign and native grown pear stocks was discussed, and the decision was in favor of imported stocks—being far superior and less disposed to blight. Mr. Saul maintained the same to be true of quince stocks; those imported from France being far superior to those grown in this country. Mr. C. Gillingham, the President of the Society, and an old experienced grower of pears, said: “I have tried to raise pears from native stocks, and it was a complete failure.”

Among the reasons assigned why foreign stocks are and should be best, is that they are more carefully grown; are, in general, at least once transplanted, after being shorted in both tops and roots; have therefore more fibrous roots, fruit earlier and more easily bear transplanting without injury from nursery to orchard.

Apricots.

W. C. Flagg after experimenting ten years with apricots, finds the Early Golden and Breda hardiest and healthiest. The latter is rather smaller, and some days later than the other, and, to our taste, not quite so good. Much larger and finer flavored is the Moorpark, but it tends to blotch, apparently with some kinds of fungus, and in wet weather to crack open and conduct itself like some of our white peaches.

In the *Prairie Farmer*, Mr. Flagg gives a list of apricots ripening in succession:

French.

Abricotin.
Musch.
Gros St. Jean.
Gros Rouge hatif.
Albergiev de Montagamet.
Gros Commune.
Vicard.
Pourrett.
Royal.
Peché.
De Versailles.
Beauge.

Downing.

Red Masculine.
Musch. Musch.
Large Early.
Large Red.
Montagamet.
Royal.
Peach.
Beauge.

Season.

End of June.
Middle of July.
End of July.
July and August.
" "
Beginning of August.
" "
Middle of August.
" "
End of August.
" "
Beg. of September.

This list covers two months, during one of which the peach is hardly a competitor, and suggests the possibility of covering the period from the latter end of June until the end of July with this delicious stone fruit. With special culture, it seems to us that it can be made profitable.

Du Breuil recommends the growing of them as seedlings, because he finds the seedlings more vigorous and longer lived, and states that the Red Masculine, Montagamet, and the Peach re-produce themselves from seed.

Profits in Small Fruits.

At the Pennsylvania Fruit Growers' Convention, Mr. A. S. Fuller spoke as follows:—"Competition is brisk, and this leads me to believe that there are but two classes of small fruit growers who can make the business very profitable. The first are those who have an abundance of capital with which, in a measure, to control unfavorable circumstances. If they only make a profit of a penny per basket, and sell enough, it will amount to considerable in the aggregate. Cultivators without a large capital having to come in competition, would be ruined with prices which gave the extensive producer a small margin for profits.

"The second class are those who have a home market, and raise their fruit without any considerable outlay for labor. A man who works in the field himself, and has a family to gather and market his fruit, will find small fruit culture quite profitable, inasmuch as he receives an immediate return for his labor; but should he attempt to extend his operations until a number of hired laborers have to be employed, he will very likely find the profits growing gradually less. It is just here that so many persons have made a most serious mistake in the culture of small fruits. At the beginning they have probably produced a few hundred quarts of fine fruit upon a small plot of land, and this being disposed of at a home market, they resolve to extend operations in the same direction, without taking into consideration the amount of capital necessary to purchase baskets and crates, as well as the extra amount of labor required in production. Even if these things are considered, the fruit grower is very liable to forget that there is sometimes a run of bad weather during the harvest season, also low prices and short crops. Perhaps some may accuse me of drawing too strongly on the negative side of this question. I beg them to remember that for many years there has been a strong team on the other side. I do not wish

to discourage any one from engaging in the culture of small fruits, but merely desire to put them on their guard against expecting too great results."

Strawberries in the South.

Dr. Swazey furnishes the following notes of how some of the newer varieties are succeeding with him:

President Wilder.—It is said that burnt children dread the fire, and as we had been severely and repeatedly burned with high price novelties in the fruit, vegetable and flower line, we rather held aloof when this variety of strawberry came out, at a dollar and a half a plant. But the experience of nearly all who have tested it, as well as our own, during the past two seasons, go to prove that it is a variety of very great promise for both home and market purposes. In fact, out of the something over a hundred varieties that we have tested pretty thoroughly in the South, the President Wilder would now be our first choice. The variety was produced in 1861, by crossing the La Constant on the Hovey's Seedling, and is thought and claimed to possess all the good qualities of both. One of the great objections to the culture of the larger and finer varieties of strawberries in the South, is the liability of the foliage to "burn" under our scorching suns. From this defect the President Wilder is remarkably free—with a single exception (Mary Stewart), we know of none more so. The growth is luxuriant, strong and healthy, and with us this year, under similar circumstances, proved nearly as productive as the Wilson. It is a late variety, however, and hence we shall be disappointed if, through the season it does not yield fully as much as the Wilson or any other variety in our grounds. The fruit is very large, conical in shape and of a beautiful crimson scarlet color. The color of the flesh is rosy-white, and the flavor rich and sprightly, much sweeter than the Wilson. In firmness it is not equal to the Wilson, but it is sufficiently so for a near market. The flowers are perfect.

Charles Downing.—There is scarcely another variety in the long catalogue of strawberries that will give more satisfaction to the cultivator than this comparatively new sort. We have not given it quite as good soil and culture as some other varieties, but up to this time it is second to none in satisfactory results. The growth is strong and healthy, and the fruit large, handsome, delicious and abundant. Indispensable to the private gardener, and a good market sort.

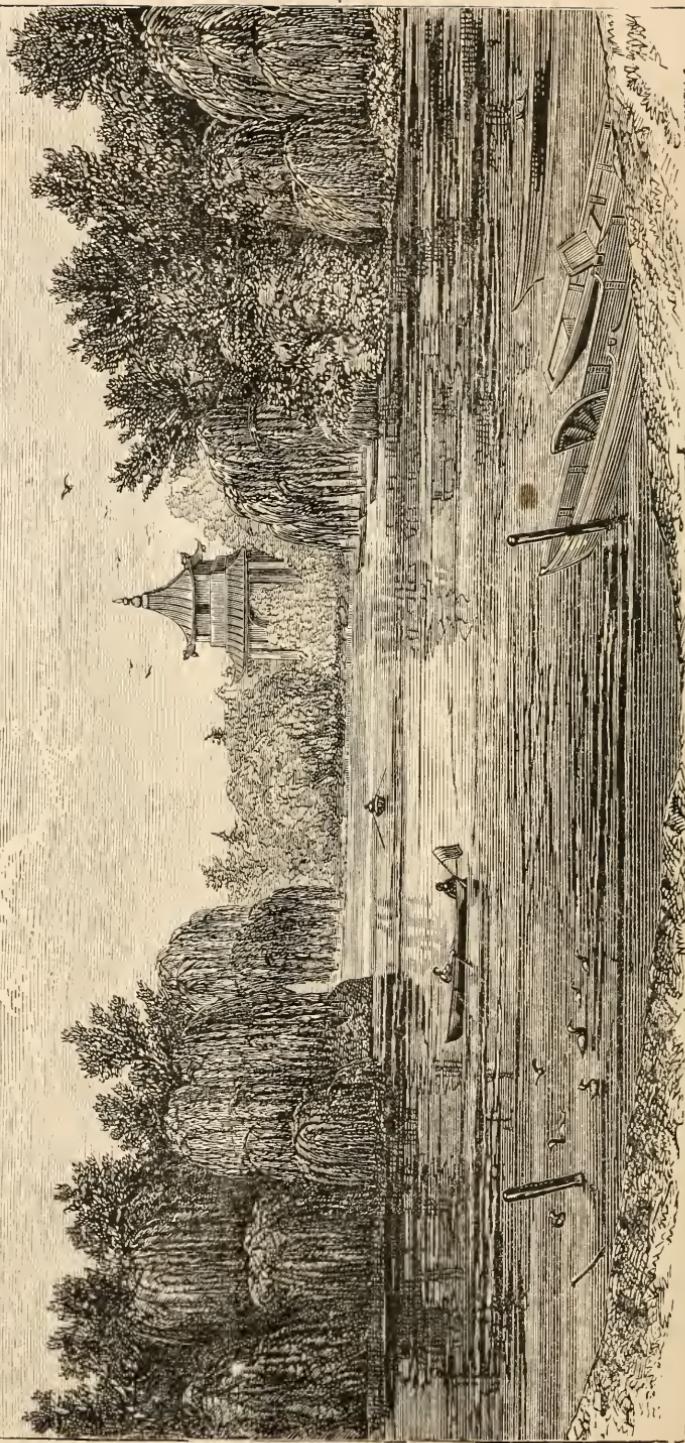
Kentucky.—For its season—after most other varieties are past their prime—there is no better strawberry than this. We have had it in our collection three years, and are better pleased with it this season than ever before. The plant is a strong grower, bears our summer suns without injury and is very productive. The berry is large, or above medium, irregular-conical in shape, of a bright crimson scarlet color, and of a most delicious flavor. Every garden should have a bed of it to fill the gap between the main strawberry crop and the black caps and black-berries. Requires rich soil and good culture.

In addition to the above there are many varieties of superior merit fruiting with us, such as Longworth Prolific, which we have had in cultivation since 1856, and like it as well here as in the clay loams of middle Mississippi—the Barnes Mammoth, which is a most valuable sort—Lennig's White, the best white variety—Brooklyn Scarlet, Agriculturist, Romeyn Seedling, Seth Boyden, Russell's Prolific, Imperial, etc., etc. But for a very select choice list, no one will lose much by confining his planting to the first five or six varieties we have named. Dr. Warder, Kissena, Black Defiance and Matilda are the latest varieties that should be tested as soon as possible by all who are able.

Black Knot on the Plum.

D. B. Wier says, in a Western journal, that the way to prevent the black knot, is to avoid planting on heavy and wet soil; if it appear, cut off all the affected parts in May or June, and cover the wounds with a thick paint of white lead, turpentine and oil. He also advises planting the Wild Goose plum and other varieties of the Chickasaw family, which do not bear black knots.

VIEW OF LAKE AND PAGODA ISLAND, VICTORIA PARK, LONDON.



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Garden Topics.

A Good List of Roses.

EACH season lists of Roses are made out by the respective florists for the gratification of flower lovers and they all get into print, and none of them agree. We observe that every florist's idea of a good list of Roses is gauged considerably by the question: *Are they easily propagated?* If so, he can sell them, and, of course, endorses them. It has become so much the rule now for every florist to recommend as best only those sorts which he can propagate easily, that we must beg pardon for saying we cannot trust their interested opinions altogether. The following list was made out by an amateur who considers the list a very good one *because the flowers are good*, and in climate south of 42 deg. are all good growers. We doubt if the list can be excelled.

Best six ever-blooming Roses for general use.—1. Giant of Battles, crimson. 2. General Jacqueminot, scarlet crimson. 3. Indica Alba, white daily. 4. Glorie de Dijon, yellow, copper centre. 5. Appoline, bright rose. 6. George Peabody, purplish crimson. These are all fine blooming roses, and *hardy*, which is a great thing for standards. There are, however, numerous others equally as fine, which other people would designate as *their* favorites.

Best three Roses for circular beds for permanent effect and continuous bloom.—1. Safrano (Tea), apricot color. 2. Hermosa (Bourbon), pale pink. 3. Washington (Noisette), white. These are fine blooming roses, but those who like darker colors would prefer Lord Raglan, dark crimson, but not a free bloomer; Charles Martel, another superb crimson, and Cardinal Patrizzi, very dark crimson, good bloomer.

Two varieties for a Rose hedge.—1. Herbemont Cluster, bears a profusion of white clusters, and blooms till December. 2. Appoline, a most lovely fall rose, growing in

good ground from ten to fifteen feet, and glorious from September to November. It blooms profusely during the summer, but as the fall advances its color is of the most vivid pink.

Bouquets in Paris.

Americans cannot appreciate the almost universal custom in Paris and London of button-hole Bouquets. As an evidence of their immense use, a French journal asserts that the average annual sale of bouquets of violets in Paris is 5,825,000. While in London it is so much the custom that at entertainments a gentleman appears singular without one.

Native Shrubs for Lawns.

Just the hobby we wish some one would ride. Who is there there that can boast special devotion to the study of ornamental and native shrubs for rural decoration? Whose place is there to be found containing a good collection of best sorts in most perfect growth? Here is an unoccupied field for our studious horticulturists to branch into. A correspondent of the *Tribune*, an ardent admirer of nature's humble beauties, says:

"There is nothing that adds more to the beauty of a lawn than well-arranged and symmetrical shrubs. Many people buy expensive species, which are not adapted to the soil and climate, and consequently die the same season. Our forests and swamps are filled with beautiful shrubs and creepers, which take kindly to a change of situation, and repay the little care they ask with their beauty and fragrance. One of the most charming places we ever saw was but a few years ago a wild, barren spot, thickly covered in many places with an undergrowth of laurel and sweet fern. The owner has transformed this sterile wild into a sort of miniature paradise. It contains, besides many foreign varieties, nearly every shrub and creeper indigenous to the soil, from the Dogwood, whitening the hills in April, to the Witch Hazel gladdening November with its yellow fringe. The Hemlock answers admirably for hedging purposes, as does also the White Thorn (*Crataegus Coccinea*) common in every pasture, and laden in June with corymbs of odorous blossoms. The Pinxter-bloom or Wild Honeysuckle (*Azalia Nudiflora*) is one of the finest and hardiest shrubs common to our Northern clime, while its delicate pink, or white blossoms, and exquisite fragrance are unexcelled in the vegetable kingdom. For a dry, stony place the American Laurel (*Kalmia latifolia*) is a fine evergreen shrub; for a marshy one nothing is more elegant than the Swamp Laurel (*Kalmia glauca*), with its rich deep green foliage and white flowers. Among our native climbers, the Virginia creeper (*Ampelopsis Quinquefolia*) stands first. It is not liable to winter-kill; its tendrils will cling to most surfaces, and its brilliant scarlet foliage in Autumn is extremely beautiful. The common Clematis (*Clematis Virginiana*) is well adapted for covering rocks, walls, and unsightly objects."

Plants for Ribbon Gardening.

We need more low-growing shrubby plants of unique and distinct foliage, to be used for ribbon gardening. It is not necessary that they be flowering plants, although everything that bears flowers is welcomed—but something of compact, speedy growth—and not over one foot in height. The varieties of *Achyranthes* are

generally used for this purpose, and among them we have always preferred for color the *Achyranthes Verschaffeltii*. The *Agriculturist* in a recent notice of it says :

"The *Achyranthes Verschaffeltii*, in its varieties, is a useful plant, and as it does not seem to have become very popular, the florists are quite likely to have a stock of it left over. The probable reason for its lack of popularity is that if not cut now and then it gets a ragged and "leggy" look, which is not attractive; but, if properly treated, it makes a good show. The original plant is of a dull purplish-red; the variety *Gilsoni*, which originated in this country, is much brighter, the stems and the veinings of the leaves being of a fine crimson. Still another variety is the Golden-veined—*Aureo-reticulata* of the catalogues—in which there is no trace of red, the leaf being a bright green, handsomely variegated by yellow veins and blotches. This, with either of the other two, will make an excellent contrast. The plants may be set eight or twelve inches apart, and, if necessary, be cut back at the time of planting. The different lines of color must be kept distinct by cutting, and the outline kept in proper form by the knife. Frequent cutting back makes the plants grow bushy, as a branch soon starts from the axil of each leaf. The young growth is much more fresh and brilliant than the older leaves."

The Dwarf June-berry.

The *Agriculturist* commands to better notice this interesting shrub :

The Dwarf June-berry is a shrub that ought to be better known. Almost every one knows the common June-berry or Shad-flower, a shrub or small tree conspicuous all over the country in April and May, with its racemes of white, long-petalled flowers. One dwarf specimen that I have had for five years is only eighteen inches high, while others in better soil are between two and three feet. They flower so profusely each spring that they are completely clothed in a sheet of white. The fruit, which is about the size of a large huckleberry, is said to be pleasant, and in some parts of the west is grown for market. I speak guardedly about the fruit, for the birds keep such a close watch of it that I do not get a chance to taste it when fully ripe. The shrub increases with moderate rapidity by suckers, and, when it is desirable to cultivate it for its fruit, it could no doubt be propagated more rapidly. But without regard to its fruit, I set a high value upon it as an ornamental shrub.

Ornamental Trees—Double Flowering Peaches.

A correspondent of the *Tribune* is heartily enthusiastic in encouraging the growth of Double Flowering Peaches in our American orchards. He says :

"We have seen groups composed of some six different colors, when the effect produced was really grand. The white is indeed perfectly charming in its simple purity, and the shades of crimson are unusually brilliant; then again the striped varieties please by their novelty. We now have another claimant for public notice in the "Blood-leaved Peach," which is a decided acquisition, especially when planted in a group, so that its peculiar purple foliage contrasts well with the green of other trees. We have personally tested its merits in this way, and know whereof we speak. Another new variety, of a tall columnar habit, comes from the South, in the way of the Irish juniper, or as a miniature Lombardy poplar. It would relieve the stiffness of a group by having a place assigned it in the centre. Other closely-allied varieties

and species and varieties are, as well, valuable for our gardening operations. The *Prunus triloba*, from Japan, makes a grand show with its large double peach-colored bloom, and the large double-flowering almond is exceedingly attractive. The dwarf almonds, both white and rose, are too well known for a lengthy description, but a place should always be assigned them in every collection. We reserve "the best wine to the last." "Reid's weeping peach" is indeed a perfect beauty, needing no artificial training, but in a natural manner, with a graceful curve, each branch represents an attraction which amply repays its owner a hundred fold for his care in its behalf. We know of no "weeper," not even the much-extolled Kilmarnock willow, that can surpass it."

How to Train Tomatoes.

Mr. Meehan thinks the easiest way to take care of Tomatoes is to train them to stakes like bean poles, instead of having arbor, or tressel, or wires, or hoops. He says:

"These stakes need not be over six feet high, and may be set about four feet apart each way. As the plants grow, tie them up to the stakes; but that will not be required over half a dozen times during the season. Twenty plants thus treated will, he thinks, yield as much fruit as double the quantity on any other plan, and in quality, he declares, there is no comparison. The common field plan of leaving Tomatoes to grow up as they list, spreading everywhere over the ground, may be, as truck-growers say it is, the way in which the heaviest weight of fruit can be had in proportion to the labor spent; but in this way the fruit is more acid."

Perfect Roses.

Peter Henderson (in the *Agriculturist*), in allusion to the fact that all the good qualities of fragrance, beauty, hardiness, and constant blooming, are not to be found in one rose, quotes the words of a German neighbor, who came to him in great irritation, and said, "I have so much trouble wid de ladies when dey comes to buy mine rose; dey wants him hardy, dey wants him doubles, dey wants him mondy, dey wants him fragrant, dey wants him nice goul, dey wants him eberydings in one rose. I have sometimes say to dat ladies: Madan, I never often sees dat ladies dat was beautiful, dat was rich, dat was good tember, dat was youngst, dat was clever, dat was berfection in one ladies. I sees her much not."

To get Tender Horse-Radish.

An English gardener says: "It may not be generally known that if leaves or litter be placed on the tops of horse-radish crowns, two feet or so thick, the plants grow through them in the course of the summer, making small white roots the thickness of one's finger, which are as tender as spring radishes, and much to be preferred to the tough, stringy stuff usually supplied with our roast beef."

Varieties of Currants.

Andrew S. Fuller thus writes, in one of his numerous papers, about currants:

"Persons unacquainted with the different varieties are frequently puzzled to determine which to purchase. The Cherry is the largest red variety in cultivation; it is a rank, vigorous grower, and requires extra care in order to secure a crop every

year. The fruit is not equal in quality to some of the smaller sorts, still it is a good currant.

The Versailles, as sold by almost every nurseryman in this country and Europe, is so near like the cherry that we have never yet seen the man who could pick out the plants or fruit from the latter, except on his own grounds, where there were labelled plants for a guide.

For the next best we would name Fertile de Pallnau, a fine, vigorous-growing variety, intermediate between the cherry and the old red Dutch. The fruit is large and handsome, and the plants produce large crops without appearing to become stunted or diseased, as is frequently the case with the cherry.

Buist's long-bunched red is also an excellent sort, very similar to the old red Dutch, of which it is a seedling.

Of course we would not omit the red Dutch from any collection, however small, for we have nothing better in quality among the red varieties.

First among the white varieties are white Dutch and white grape; and, in fact, we may stop there, for there are none better. The white grape is a little the largest variety, and the plants wonderfully prolific, but it is not so vigorous a grower as the white Dutch.

The white Provence differs from the white Dutch by having a portion of its leaves margined with white, and the young shoots a little more stocky, the buds not being so far apart.

Dana's white is so near like its parent, the white grape, that we have never been able to detect a difference, and our plants came direct from the originator.

Victoria is a late variety, the bunches very long, fruit of medium size and of lighter color than the red Dutch.

Champagne, as its name indicates, is a very pale red or pink-colored sort.

Prince Albert is a late sort, bunches short, and usually not well filled. Fruit red, and not particularly valuable.

Gloire des Sablons is a handsome striped variety of no value except as a curiosity.

Red Provence is the most vigorous growing sort we have, but the fruit ripens late, is very acid and small, and of no value.

La Hative and La Fertile may be called abbreviated editions of the Cherry, belonging to the same class, having large, coarse, thick, dark-green leaves. The fruit is large, bunches small, and berries comparatively few in number.

There are several other sorts, such as Knight's sweet, Knight's Early, and Gondoin White and Red: but they possess no merits not found in the first few sorts named.

Among the black currants, the Black Naples is, without doubt, the best. Bang-up-Black, Old English Black, Ogden's Grape, Variegated-Leaved Black, Heterophylla, and several other varieties of this species, may be grown for the sake of helping to make a long list; but it would be difficult to find any other reasonable excuse for doing so.

Mowing Strawberries.

During one of the winter meetings of the Massachusetts Horticultural Society, the subject of mowing off the leaves of strawberries came up for discussion; most of

the speakers agreed as to its highly beneficial effect. It resulted in producing a growth of more vigorous and healthy foliage; the flower buds for the next year being formed at this time, such a quality of foliage is of great importance. Further observation has also shown that not only the tops but the roots are renewed at this time, giving a new and vigorous set of roots to furnish nourishment to the growing fruit.

Small Fruits.

The value of varieties of fruits can be largely determined by the prizes which are given by such horticultural societies as that at Boston. Here, among currants, the prizes of 1872 were taken by Versaillaise, among the red varieties, and Dana's Transparent was superior to any other white. It may be safely pronounced the most desirable of the white currants.

Gooseberries.—During the exhibition in Boston, in the summer of 1872, the prizes awarded were: 1st to Downing; 2d to Smith's Seedling; 3d to Houghton's Seedling.

Cure for Currant Louse.

The officers of the Massachusetts Horticultural Society say: "The experience of another year has shown that hellebore is not only the most effectual, but when promptly applied, as cheap as any remedy. A good method of using is to place it in a wide-mouthed jar, with a lip around the edge, over which can be tied one or two thicknesses of fine muslin. The hellebore can then be shaken through the muslin directly where it is wanted, with very little waste, and, if good, is certain death to every worm it touches."

The Martha Grape.

The Martha Grape, we think, can be safely introduced into any family garden. The Massachusetts Horticultural Society thus speaks of it: "Among the newer grapes the Martha seems to gain in favor. One of the committee, who has fruited this variety for several years, thinks better and better of it. This year it ripened freely, and the vines, in a moderately rich soil, grew famously, making canes from nine to twelve feet long. It seems hardy, healthy, and as good as its parent the Concord. The experience of another member has, however, been exactly the reverse of this.



Landscape Gardening.

I AM glad to see the plan of landscape gardening in the last number of THE HORTICULTURIST. It calls to mind the idea of Landscape Farming; or the division of farms into triangular plots, with horticultural effects produced by trees and shrubs. Why could not three to twenty acres be in wheat and oats and corn, as the crop of the year as the rotation comes, as well as the little plot of rods in grass, and all neatly done as to its landscape effects? Let some one rush into a Landscape Farm. Build up Mount Holyoke, Amherst, at the East; and the old sound colleges at the West. Vary the novelties in trees, fruits and seed crop farms on the large scale.

S. J. PARKER, M. D.

Illinois Industrial University.

Experiments with Early Cabbage.

THESE experiments, says Mr. H. K. Vieroy, orchardist and gardener, were made on poor land, lightly manured with coarse horse manure and plowed under about eight inches deep. They were planted the same day, May 8, 1872, and received the same care.

The gross weight given is that of the whole plant above the stalk, the net weight that of the cabbage with the leaves trimmed off ready for market.

The following list, in the order of ripening, have done well in the market garden and vicinity; a few Little Pixie for very early—to small for profit—Jersey Wakefield, Early Wyman, Falter's Improved, Winningstadt, and Schweinfurth.

Winningstadt is very solid, from the time it begins to head to maturity, and is very valuable, on this account, as it will do to market before it is ripe.

Six plants of each were set out, but as one or two plants died, in some cases, the following averages are not all made from six heads:

VARIETIES.	Matured.	Gross Weight.		Net Weight.		Loss.		
		lb.	oz.	lb.	oz.	lb.	oz.	
Dwarf Loch.....	July 23	4	1	2	12	1	5	32.3
Early Dwarf Savoy	"	3	7 $\frac{3}{4}$	1	12 $\frac{1}{4}$	1	11 $\frac{1}{2}$	50.
Early Wyman.....	Aug. 10	4	12 $\frac{1}{2}$	3	14 $\frac{1}{8}$	14 $\frac{1}{8}$	18.	
Enfield Market.....	"	5	7 $\frac{5}{8}$	4	1	1	6 $\frac{1}{2}$	25.8
Early Blood Red.....	"	4	15 $\frac{5}{8}$	3	2 $\frac{1}{3}$	1	13 $\frac{1}{2}$	37.1
Jersey Wakefield.....	" 1	6	4 $\frac{1}{2}$	4	1 $\frac{1}{2}$	2	3 $\frac{1}{3}$	35.1
Little Pixie.....	July 23	2	6 $\frac{1}{4}$	1	11	11 $\frac{1}{2}$	21.5	
Large Oxheart.....	"	5	5 $\frac{1}{3}$	3	13	1	8 $\frac{1}{2}$	28.5
Large York.....	"	4	7 $\frac{7}{8}$	3	5 $\frac{1}{2}$	1	9 $\frac{2}{3}$	35.7
Schweinfurth.....	Aug. 1	6	9 $\frac{1}{8}$	4	13 $\frac{1}{2}$	1	11 $\frac{1}{2}$	26.1
Sugar Loaf	"	5	10	3	9	2	1	36.6
Winningstadt	" 10	6	13 $\frac{1}{8}$	3	15 $\frac{1}{3}$	2	13 $\frac{1}{2}$	41.7
Wheeler.....	" 10	2	15 $\frac{1}{2}$	1	6 $\frac{1}{3}$	1	9 $\frac{2}{3}$	53.2

Experiments with Tomatoes.

These were planted on poor ground, without any manure, three plants of each variety; all planted at the same time, and given equal care and attention.

Trophy, New York Market, and Early Smooth Red, succeeded best with us in field cultivation. The Trophy was at least seventy-five per cent better than anything we have tried. It is large and even size, very smooth, few seeds, very solid, and of good flavor :

1872. VARIETIES.	Time of planting.	First fruit set.	First fruit ripe.	First pick- ing, Aug. 7.	Second picking, Aug. 19.	Third pick- ing, Aug. 29.	Fourth picking, Sept. 10.	Fifth pick- ing, Sept. 18.	Total.
									lbs. oz.
1 Alger	May 14	July 9	Aug. 1	1 8	3 3	11 8	1 8	18 4	34 7
2 Cedar Hill.....	June 28	July 25	1	8	7	11	10	29 14	51 8
3 Dwarf Orangefield	"	"	1 1½	7	10	6	11	6 4	22 4½
4 Early Smooth Red	"	"	10	8	11	15	.....	17 12	38 5
5 " Prolific	July 9	" 27	1½	14½	1	11	10	1 4	4 9
6 " Shipping	"	Aug. 1	.....	3	1	1	.....	5	9 6
7 Fejee	June 28	July 28	5½	3	15	6	17	6 6	17 11½
8 Golden Striped	"	Aug. 1	.....	4	15	3	7	4½	11 12 20 6½
9 Gen. Grant	"	July 25	4	4	7	6	3	14½ 9	3 20 15½
10 Hathaway's Excelsior	"	July 23	.....	1	3	3	8	7	5 12
11 Hubbard's Curled Leaf	" 30	" 28	9	5	2	4	4	11½ 5	15 16 9½
12 Large York	" 28	" 27	8½	4	1½	2	8	8	11 13 18 13
13 Lester's Perfected	July 9	Ang. 1	.....	1	13	5	10	10 14	9 21 10
14 New York Market .....	"	"	.....	.....	4	3	7½	.....	18 3 21 15½
15 Orangefield	June 28	July 27	5	2	11	3	1½	6½	10 10 17 2
16 Persian	"	20	.....	.....	12½	.....	.....	12½ 7	5 8 14
17 Rising Sun	July 12	Ang. 2	.....	2	3	8	.....	8	6
18 Smooth Red	June 28	July 20	8	3	9	3	12	12 12	8 21 1
19 Trophy	July 12	Ang. 5	.....	.....	13	3	.....	4	5 8 2
20 Howard	July 20	" 10	.....	.....	.....	8½	.....	3	9 4 4

REMARKS.

- 1 Pretty fair size, but not so smooth as some.
- 2 Abundant bearer, fair size, and pretty smooth.
- 3 Medium.
- 4 Very smooth, good bearer, but rather small.
- 5 Nothing to recommend it.
- 6 Nothing to recommend it.
- 7 Late, very fair size, and generally a good bearer.
- 8 Very pretty striped, fair size, and medium bearer.
- 9 Very good.
- 10 Cracks badly when ripe ; about same size and quality as Early Smooth Red.
- 11 Nothing to recommend it.
- 12 Yellow, fair size, pretty smooth, and very good quality. ¶
- 13 Very good ; late.
- 14 In field cultivation was next to Trophy, and nearly as early as Smooth Red.
- 15 Nothing to recommend it.
- 16 Yellow ; nothing to recommend it.
- 17 First planting destroyed.
- 18 Very good.
- 19 Plants injured by cut-worms ; two plants entirely destroyed.
- 20 Did not grow very well.

Grape Phylloxera.

THIS is fast becoming a word to be dreaded by men on both sides of the Atlantic. Such men as the State Entomologist of Missouri attribute the death of the ends of vines, and the inability of the vine to break the fruit buds, to this insect on the rootlets of the vine. It becomes all horticulturists to examine and see if this is so.

In Europe it is said it kills the whole vine, root and all, by its depredations on the roots and rootlets. What I announced, at least ten years ago, as "black rot," I now suspect is this insect. We ask the editor of THE HORTICULTURIST to publish the description of this minute insect, as it feeds on the leaf and on the roots. Prof. Riley, of St. Louis, ought to give a good practical article on it; or at least, extracts from his able State reports.

Button-hole Flowers.

FERNS used for button-hole, or indeed for any kind of bouquets, should be cut off plants that have been grown in a cool house, or that have at all events been well-hardened off, or otherwise, though they may look fresh and nice when cut, they shrivel up in a few hours, when of course their beauty is gone. In the case of Maiden-hair it is a good plan to cut off the very young points, as, with the exception of these, the other parts of the frond keep well. Another point that should be remembered is always to keep the stems of the button-holes as thin as possible, in order that they may easily pass through the coat, and nicely fit the little glass water-tubes which are now so much worn, and which keep both Ferns and flowers fresh so much longer than they otherwise would be. After the bouquets are made, many place their stems in water, to keep them fresh; this I do not think a good plan, as, though the stems may be in the water, the Ferns are exposed to the air, and, thus circumstaneed, they will not keep nearly so long fresh as if they were shut up in some air-tight box or drawer.

Dealers in bouquets have numbers of drawers lined with zinc in which they keep their flowers, mounted or otherwise, but though those who have shops must have such appliances as these, it is not to be expected that amateurs will be furnished with them. If I want to keep a button-hole flower from one day to another I place it in a little box made either of wood or cardboard, over the bottom of which is laid some wet moss of the kind one gets in bundles at the flower shops or finds in the woods or on banks. I place the back of the bouquet next the moss and cover the stem over with more wet moss. I then sprinkle the flowers and Ferns well with water and shut down the lid, which is as air-tight as possible, and, treated thus, flowers and Ferns will keep fresh for days. If I want to send a bouquet by post, I put moss enough in the box to raise the bouquet when laid in it nearly level with the lid when shut down, and across the face of the flowers I lay a piece of cotton wool, which keeps them from rubbing against the lid.

Coat Flower.

These I like associated with fronds of Maiden-hair Ferns, that is if the Fern is an indoor one; as what, for instane, looks so elegant with a Gardenia as a bit of Fern, the bright green spray of which sets off white blossoms of all kinds to much advantage. The coat flower to which was awarded the second prize at Birmingham last year consisted of a small spray of red Combretum, backed with a frond of Maiden-hair. There are numbers of flowers suitable for such an arrangement as this, but care should be taken that such as are selected are good specimens of their respective kinds, and be a little shrouded in the Fern, as many coat flowers I have seen were quite spoiled by having only one spray of Fern, against which was laid the flower; the latter, under such eireumstances, looking hard and stiff. Now, had there been another small piece to fill up the space at the base, and a tiny bit drawn across the flower, the effect would have been much enhanced. This should always be done if the flower used is of a bright or glaring color. I always like to see a Rose with a leaf belonging to itself behind it, and a few sprays of the young brown-colored growth around it. Such an arrangement may seem easy to manage, but this is not the ease, as the Rose leaf must be wired, and that is one of the most difficult of all

things to do properly. Take a Rose-leaf, and lay it face downwards on a table. It will then represent a stem with two or three small leaflets on each side, and one at the top. Down the centre of each of these small leaves or leaflets is a comparatively thick midrib, with slighter ones branching off from it. Take a piece of fine wire and pass it through the leaf (always selecting the top leaflet first), under one of these slight ribs, and bring it up on the opposite side of the ribs. Subject two or three of the ribs to this operation, always keeping close to the centre rib: in fact, work as if you were sewing through the leaf, having the long stitches, if I may so call them, on the wrong side, and it will be found to take great care and practice to keep them from being seen on the right side. The wire should be cut off at the top, so as not to let it appear above the point of the leaf. The other part should then be drawn down the long stem, and given a twist here and there; but take care to keep the wire from being visible. The little side leaves should be done in the same manner, the only difference being that the wire is cut off at each end, and not brought down the long stem like the top one. To do all this well takes some little time and trouble; but a Rose-leaf, if not mounted as just described, is liable to get out of shape, and to hang down; if wired, however, it keeps stiff, and can be bent back and arranged according to fancy, just as one would adjust an artificial leaf.—*The Garden.*

Salt on Trees.

EEDITOR of THE HORTICULTURIST:—I notice in your May number a note on the destructive effects of common salt on trees. I apprehend that the injury done is more frequent than is often suspected. Last week an acquaintance called and requested me, as familiar with fruits, to examine his cherry trees in his front door yard, which were dying, while the same varieties in adjoining yards were not only healthy, but in full bloom and vigor. I noticed that the injury was done to four trees, three Black Tartarians and one Elton. Other trees, within sixty feet, had no dead limbs or blackened bark. No insect was to be discovered. At last I suggested—you have four new boarders; they wet at night the roots. The salt in the solutions of the effete water of the body has done the work. He was incredulous, as the grass was not killed by the salt, yet soon discovered the habit I refer to.

Another man emptied on a sidewalk a half barrel of beef brine. He thought it would do the walk no harm, and it did not; but it killed just the half of a pine shade tree, which was fed by the roots under the gravel village sidewalk. This shows that certain trees are fed by parts of themselves, by roots from certain directions, as the roots from the street gave healthy sap to the part of the tree next the street.

A dog of a visitor had the habit of wetting a pot in which was a fine Orange Tree, whose graft was before full of oranges and blossoms. Since that time, now three years, no fruit or blossoms have appeared, and though the earth has been several times changed, no fresh healthy growth has taken place.

So are often plants and trees in and out of doors. We suggest care.

S. J. PARKER, M. D.

Plant Cases.

Essay read by Mr. Franks at the November meeting of the Champaign County Horticultural Society.

"PLANT Cases" may be termed miniature greenhouses or conservatories, subject to the same rules and regulations as their larger and more pretentious neighbors, and are equally capable of giving as much pleasure and entertainment according to their size.

These Cases may be made any shape or size, to suit individual taste. Some prefer them octagonal, others quadrangular. They are especially adapted to the growth of ferns and other cryptogams, but, by proper attention to watering and ventilation, many flowering plants may be grown successfully in them. Each class, however, had better be grown in separate Cases, as they require different treatment.

How to make a Plant Case.

Make the box in any form you may desire; let it be about six inches deep; this should be well painted inside and out. At one end, in the bottom, insert a small faueet or wooden plug, to allow the water to pass off if necessary. Put in the bottom about two inches of drainage—it may be broken brick, cinders, or anything of a porous nature, that will absorb water or allow it to pass through freely. Cover the drainage with decayed sod or moss, to prevent the soil from mingling with it, and on this put as much good compost as the box will hold, composed of sand, loam and leaf-mould, about equal parts. In this soil may be planted a variety of plants of small growth, according to taste. The upper portion consists of a permanent framework of wood (black walnut looks well), or it may be made of iron or zinc. It had better be glazed on all sides and top. The frame may rest in a groove sunk in the box.

Give the plants a good watering, then put the frame on, and they will not require any more for many weeks. The frame should be taken off for half an hour every morning to admit air, but do not let a cold draught strike them. For ferns and mosses, it will not be necessary to remove the top oftener than once a month.

Perhaps the most simple, and at the same time, tasteful, Plant Case, is a bell glass, with terra cotta dish; but these are necessarily small, and the variety of plants must correspond.

After these general remarks, it will be well to give a more detailed description of the mode of treatment best adapted for ferns and mosses, and these are more generally grown in this way than other plants.

It must be borne in mind that ferns, although they like a moist atmosphere, cannot thrive when their roots are in water; hence, to obtain the best results, they must have good drainage. Then, a frequent sprinkling over the fronds will not injure them, but will be rather beneficial. They delight in a compost of leaf-mould, well decayed, and a little sand.

In a fern Case of two or three feet in diameter, there is room for a great deal of taste to be displayed, not only in the arrangement of the plants, but in building miniature castles and rock-work. Many of the choicest and most delicate ferns may be placed on these elevations, and will then show to great advantage. Care must be taken not to overdo the thing by putting in too many ornaments. Anything that is

glazed or highly colored will be out of place, and will be liable to detract from the quiet beauty of the little fernery.

The best material for building up the rock work and arches is coke. By making a thin mixture of cement and water, and dipping the coke in, a nice sober brown stone is imitated, which will soon be covered with natural moss, adding much to its beauty. Another article which I have used with good effect is petrified moss. Fine specimens of this may be procured at Danville, and at the Sangamon near at hand.

Varieties of Ferns to be Used.

Our woods in this neighborhood are but poorly furnished with ferns—three species being all I have been able to find, so far. One of them, the Maiden-hair Fern—*Adiantum pedatum*—is very pretty in Cases; the other two are rather too coarse for that purpose.

There are many native ferns in this country that would look well if they could be procured; but we have to wait until they have been sent to Europe, and returned with big names attached, before they are appreciated.

At the risk of being considered pedantic, I will append the names of a dozen ferns that may be grown in a Case with ordinary care, and not requiring much artificial heat:

Asplenium adiantum-nigrum; *Asplenium Nidus avis*; *Adiantum cuneatum*; *Adiantum fulvum*; *Doodia aspera*; *Nephobolus lingua*; *Onychium japonicum*; *Pteris albo-lineata*; *Davallia dissecta*; *Oleander nodosa*; *Polypodium repens*; *Scolopendrium vulgare*.

These are very ugly names for such pretty plants, but they will not appear so hard when we become better acquainted with them.

I will not try your patience by naming the many pretty mosses (or properly speaking, Selaginellas) that help to beautify the Fern Case. Suffice it to say, they are all worthy a place in our fernery.

There is one more point that should not be forgotten: Keep them in the light, but not in the sun. A north or west window will be found the best for them—a situation where few other plants would thrive.



Greenhouse and Pot Plants.

JOSEPH POLLARD, who has charge of the extensive Greenhouses of Hon. Alexander Mitchell, Milwaukee, presented a paper on Greenhouse and Pot Plants, at the recent meeting of the Wisconsin State Horticultural Society, of which the following is an abstract:

"Greenhouses have now become as necessary to complete houses as parlors or dining rooms. If possible they should be built in a warm, sheltered situation with a south aspect. Every crevice should be well closed. Fire heat should be applied by flues or hot water pipes, running them near the coldest parts of the house.

Occasional syringing is very necessary when fire heat is used. On warm, sunny days the top of the soil dries first, but in severe cold weather, where strong heat is needed, pots dry first at the bottom, and plants may suffer although syringed.

When there is an appearance of wilting of the foliage, the plants should have a thorough watering, showing at the bottom of the pots. The water should be as near the temperature of the house as possible. Unskillful watering is a great evil in Greenhouse management. Plants cannot be watered without injury unless they show the need of it, for the water will remain stagnant in the soil. Neglecting to water at the proper time is equally injurious to the plant."

A few favorite plants are the following:

Camelia Japonica.—The dark green, glossy foliage and glorious flowers of these plants commands the admiration of all. They are more easily cultivated than is generally supposed. They should be potted in a soil composed of two parts sandy loam, one part peat, with a little leaf mould added. They should be syringed three or four times a week, except when in flower, and kept in a close, moist place while growing. Water sparingly if plant is strong and robust, to cause a better bud setting. When this is done be careful not to allow them to become too dry. The plant flowers freely in temperature of fifty deg., in a moist atmosphere.

Azalias delight in a soil of two parts peat, one part loam, and considerable sand. In well drained soil, and not allowed to become too dry, they thrive in almost any situation, although preferring partial shade. Exposure to sun is better than too much shade. In summer months they must be plunged to the rim of the pots in the ground. No hard wooded plant requires so much watering as this.

Acacias are Australian plants of many varieties, with snowy yellow flowers, blooming from January to April. They should have a soil of two parts loam and one part each of sand and peat, a low temperature and abundance of water when flowering.

The *Pelargonium* is often erroneously called the Lady Washington Geranium. No plant is more beautiful than a well grown Pelargonium loaded with flowers, and none needs more care. In almost every collection we find it in a worthless condition. To propagate them take cuttings as early as possible in June, and put them in six inch pots in a close frame. In about a month they will be rooted, when they are to be carefully repotted in three inch pots, replaced in frame, admitting air mornings and evenings after they begin to grow. The tops should be pinched off to induce side shoots. When pots are well filled with roots, repot in six inch pots, giving air night and day, but guarding against heavy rains. September 1st shift to eight inch pots, replace in frames for two weeks, and then give no water except when they show signs of suffering. House them at approach of frost, keeping near the glass, giving air freely and watering once a week. As the days begin to lengthen, give a little more water. By middle of March put in ten inch pots, give plenty of water, and after showing bloom, give liquid manure three times a week until buds show color. Two inches of drainage with a little moss is used in potting. The soil is equal parts loam and leaf mould, with a little sand and well rotted cow manure.

Fuchsias should be brought from the cellar or pit about the middle of February, if an early bloom is desired. Use the knife freely and give a temperature of 45°. Water sparingly until leaf buds break, then repot in small pots; shifting into larger pots as they grow, continuing this until it is wished to have them flower. This plan gives strong, stocky plants. They can be shaped as desired by cutting. The soil

should be sandy loam and leaf mould. Water and light should be given freely while flowering, avoiding too strong heat.

Calla Ethiopica, if to flower in winter months, should be exposed to full sun in June, sheltered from rain and without water. At the last of August remove from pots, shaking off old soil and removing all decayed matter and young shoots. Put them in rich soil, sandy loam and leaf mould, exposing to full sun in open air. Water freely until they are housed at approach of frost. In the house give them a sunny place near the glass. The pots should be well drained and the plants freely watered while growing. The least frost will kill them. With air, light, moisture and a temperature of 50° they will flower freely. The plant deserves to be in every collection.

Scarlet Geraniums are easily grown. They require a light, rich soil, of loam, leaf mould, or rotted manure and sand. They root readily without glass or bottom heat. Take cuttings in autumn, put into well drained six inch pots, filled with sand. Place them in a cold frame, where they will root in a month or five weeks, when they should be put in three inch pots and watered occasionally until housed. During the winter they need little watering and only a low temperature. In March shift them to five inch pots. They can easily be grown without a greenhouse. When frost nips the foliage, put them into as small pots as possible, and put in dry pit or a cellar free from frost, and leave them dry until spring, when they should be cut back to four or five eyes, and they will flower better for the winter's rest.

How about the Peaches?

BY DAVID EVANS JR., CHESAPEAKE CITY, MD.

THERE seems to be a great outcry amongst fruit growers generally that the very prolific fruit year of 1872 will be followed by a season of great scarcity. We do not entertain such ultra views, yet, judging from careful observation, and the views of many prominent peach growers in this State and in Delaware, I think the crop will fall short at least one-half, compared with last year, which, in my estimation, is a pecuniary benefit to the growers, for the cost of transportation and gathering will be no more per basket than when the trees were overloaded, while they will bring much more per basket clear. The consumers will, too, be benefited, for they will have good, eatable fruit in place of much of the worthless trash which was consumed last year under the name of peaches, although they may have to pay something more per basket.

During our observation, it has been a noticeable fact that orchards planted where they are under the immediate influence of large bodies of water, other things being equal, are promising a generous yield of fruit, while other plantations, though more remote, and where they would be denominated as inland orchards, will not produce any more than half a regular crop.

It seems that above the latitude of Smyrna, Delaware, the peaches have suffered severely from the unusually severe winter, while below that the general impression entertained is that a full crop will be marketed. Now, whether this be due to difference in cultivation, difference in management, the youthful or aged state of the trees, I am not at present prepared to say, but such is the case, and I believe is

well founded. Perhaps some of our older peach orchardists can explain the why. My opinion is that the aggregate crop may fall short about one-third, and the coming season will prove how far wrong my conjectures have been. So dejected have some large peach growers become, they have said they were willing to sell out for little or nothing. One in particular, offered to sell the whole of his large orchard for six cents a tree. I think he will change his tune before the middle of May.

Note by Editor.—Recent estimates, by the Peninsula Fruit Growers' Association, of Delaware, place the figures at 2,300,000 baskets, a falling off of over twenty-five per cent on crop of 1872. The crop marketed last year was nearly 3,500,000 baskets.

A Monument of Trees.

A sketch of the history of Thomas Hamilton, Earl of Haddington, recounts his love of tree planting, and the fact of the publication of a book "on Forest Trees," composed mainly of letters from his pen to his grandson. He is shown to be one of the most sagacious and enterprising of rural gentlemen, in the improvement of his domain, but loved the pleasure of the hunt too well. His wife took upon herself the fancy that trees could be planted and made to grow, and the author thus recounts the way she came to carry out her will :

"When I came," he says, "to live here (Tyningham), there were not above fourteen acres set with trees. I believe that it was a received notion, that no tree would grow here on account of the sea air and the northeast wind; so that the rest of our family, who had lived here, either believed the common opinion, or did not delight in planting. I had no pleasure in planting; but delighted in horses and dogs, and the sports of the field; but my wife did what she could to engage me to it, but in vain. At last she asked leave to go about it herself, which she did, and I was much pleased with some little things which were well laid out and executed. These attracted my notice, and the Earl of Mar, the Marquis of Tweedale and others, admired the beauty of the work and the enterprise of the lady."

After her ladyship had succeeded in rearing several ornamental clumps, she proposed to enclose and plant the moor of Tyningham, a waste common of about three hundred Scotch acres. The Earl agreed to her making the experiment, and, to the surprise of every one, the moor was speedily covered with a thriving plantation, that received the name of Binningwood. His lordship was tempted, by the success of these trials, to enter himself, with great eagerness, into the plan of sheltering and enriching the family estate by plantations. He planted several other pieces of waste land, enclosed and divided his cultivated fields with strips of wood, and even made a tract along the seashore, called the East Links, which had always been regarded as a barren sand, productive of the finest firs.

"And thus," says Mr. McWilliam, in his ingenious and useful 'Essay on the Dry Rot and Cultivation of Forest Trees,' "did her ladyship, to the honor of her sex, and benefit of her lord and her country overcome the prejudices of the sea and the barren moor being pernicious; and of horses and dogs being the best amusement for a nobleman; converting a dashing son of Nimrod into an industrious planter, a thoughtless spendthrift into a frugal patriot."

Thus can good wives in ev'ry station,
On man work miracles of reformation,
And were such wives more common, their husbands would endure it,
However great the malady, a living wife can cure it.
And much their aid is wanted; we hope they'll use it fairish,
While barren ground, where wood should be, appears in every parish.

Orchards.

The Advantages and Disadvantages of Shelter Belts.

W. C. FLAGG, of the *Prairie Farmer*, read an essay upon the above subject, at a late meeting of the Champaign Horticultural Society. We copy his summary of the advantages and disadvantages of shelter :—

The advantages of shelter belts are,

1st. That they mitigate the extremes of heat and cold, both of which are brought mainly by western winds.

2d. That they check the rapid evaporation of moisture, and probably increase the local rainfall.

3d. That they protect the trees from the mechanical effects of winds that would otherwise bend them over and shake off the fruit.

The sum of these advantages is a large amount. It is probable that the deterioration of trees and fruits that many claim to take place as the country grows older, is the result not of a decrease of rainfall or mean temperature, but of the extremes of heat and aridity, of cold and drought that come from a more naked surface, and anything that will in any degree restore the equilibrium must be of value.

On the other hand, the disadvantages of shelter belts are,

1st. They rob the nearer orchard trees of their sustenance and prevent their proper development.

2d. They prevent, to a certain extent, proper ventilation of the orchard, resulting in an increase of fungoid disease and a healthy development of fruit. Even movement on the stem, our grape-growers declare, is necessary for the production of the finest grapes. Many of our Southern Illinois grape-growers also think it essential to provide for proper ventilation in their vineyards by widening the spaces between the north and south rows and having no protection on the north to prevent the free passage of the south winds. The same is no doubt true to a certain extent of the orchard fruits.

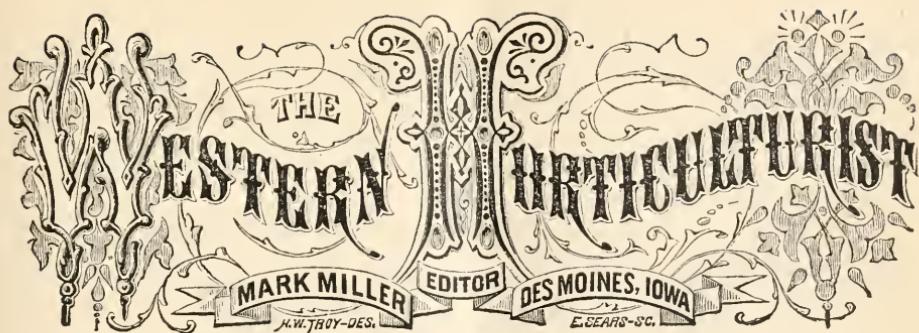
The first of these disadvantages can easily be guarded against by leaving wide spaces between orchard belts and the nearer trees. The second is more difficult. It amounts to this :—That checking the free passage of air does at once good and harm, and we must, to the best of our ability, endeavor to get the good without the mischief. To do this we would suggest the following points :

1st. Plant shelter belts in this State on the west sides of your orchards only. They will thus tend to break the force of the west and the northwest winter winds. If the orchard or field is large it may be well, as Mr. Edwards, of Lamoille, suggests, to plant one or more north and south belts through the orchard, as has been done in the Industrial University experimental orchards.

2d. If the orchard is much exposed on the north it may answer to protect it with clumps of trees that will not entirely check circulation of air.

3d. If there be hollows running to the northward these should be each planted with a clump to prevent the ascent of the cold air that would at times be driven up them like the ocean waters into a bay.

4th. Leave the south and east sides open—the latter to be protected by your next neighbor's plantation, if at all, and the former because you wish to admit all south winds and perhaps some portion of those from the southwest.



American Pomological Society.

WE received too late for acknowledgement in June issue, from Hon. Marshall P. Wilder, the proof sheet of a circular pertaining to the American Pomological Society. We now have in hand a duplicate of the same, with programme and premium list attached for the coming meeting of the Society, to be held in Boston, Sept. 10th to 13th. It appears that the most ample and complete preparations are already perfected by the Massachusetts Horticultural Society, and other generous parties, to make the fourteenth biennial session of this National Association of Fruit Growers a grand success. The collection of fruits there gathered from the hills and valleys of New England, the sunny South, the blooming prairies of the West, and from the more genial clime of the Pacific Slope, cannot but make this occasion one of no ordinary interest and importance in the history of American Pomology. President Wilder writes us:—"The interest will be increased by visits to noted places, and by the grand Plant Exhibition of the Massachusetts Horticultural Society at the same time."

The prime object or purpose of the Pomological Society, is to bring together intelligent and practical fruit men from all parts of the country, and in council, by a free interchange of experience and observation, to collect and diffuse such researches and discoveries as are being made in the wonderful progress in this branch of national industry. It is true, as has been said, that horticultural journals and horticultural societies may be considered the common schools of the art. But a National Congress of Fruit Growers, like the American Pomological Society, takes still higher ground, and may properly be considered as the University of Horticulture for the whole country.

Fruit growers everywhere, throughout our widely extended country, should heartily respond to the call for this meeting, by contributions of fruit, and by the enrollment of their names as members of the Association. The Society has no other resource for means to cover the publication of its transactions and incidental expenses than what is derived from its membership fees. Persons wishing to become members, and thereby entitle themselves to the next volume of the Society's transactions, will address Thomas P. James, Treasurer, Cambridge, Mass. Twenty dollars constitutes a life membership; four dollars a biennial member. The coming volume will be one of special interest and value to every fruit grower in the land. Among the many valuable papers it will contain, one of great value is expected from Professor Agassiz on "The Geological Age of Fruit Bearing Plants."

Packages of fruits, with the name of the contributor, may be addressed as follows : "American Pomological Society," care of E. W. Buswell, Massachusetts Horticultural Society, Boston.

Circulars with programme, premium list, etc., may be obtained by application to Hon. M. P. Wilder, Boston.

Premium List.

Apples—For the largest and best collection of Apples, correctly named, from any State or Society, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of Apples, correctly named, grown by one individual, three specimens of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

Pears—For the largest and best collection of Pears, correctly named, from any State or Society, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of Pears, correctly named, grown by one individual, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

Grapes—For the largest and best collection of named Native Grapes, from any State or Society, three bunches of each variety, .

1st Premium, The Society's Silver Medal and Fifty Dollars
2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of named Native Grapes, grown by one individual, three bunches each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of named Grapes, grown west of the Rocky Mountains, two bunches each variety,

Premium, The Society's Silver Medal and Fifty Dollars.

For the largest and best collection of Native Grapes, correctly named, grown south of the Southern line of Virginia, Tennessee, Missouri, etc., two bunches of each variety,

Premium, The Society's Silver Medal and Fifty Dollars.

For the largest and best collection of Grapes grown under glass, two bunches each variety,

Premium, The Society's Silver Medal and Fifty Dollars.

Peaches—For the largest and best collection of Peaches, correctly named, from any State or Society, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.
2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of Peaches, correctly named, grown by one individual, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.

2d " " " Bronze Medal and Twenty-five Dollars.

Plums—For the largest and best collection of Plums, correctly named, from any State or Society, three of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.

2d " " " Bronze Medal and Twenty-five Dollars.

For the largest and best collection of Plums, correctly named, grown by one individual, three specimens of each variety,

1st Premium, The Society's Silver Medal and Fifty Dollars.

2d " " " Bronze Medal and Twenty-five Dollars.

Seedling Fruits—For the best collection of seedling Apples, grown by one individual,

Premium, The Society's Silver Medal.

For the best collection of seedling Pears, grown by one individual,

Premium, The Society's Silver Medal.

For the best collection of seedling hardy Native Grapes, either from native seeds or hybrids, grown by one individual,

Premium, The Society's Silver Medal.

For the best collection of seedling Plums, grown by one individual,

Premium, The Society's Silver Medal.

For the best collection of seedling Peaches, grown by one individual,

Premium, The Society's Silver Medal.

Figs—For the best collection of fresh Figs grown in open air,

Premium, The Society's Silver Medal.

For the best exhibition of Dried Figs, grown and cured in the United States,

Premium, the Society's Silver Medal.

Oranges—For the best collection of Oranges grown in open air,

Premium, the Society's Silver Medal.

Lemons—For the best collection of Lemons grown in open air,

Premium, The Society's Silver Medal.

Raisins—For the best exhibition of, grown and cured in the United States,

Premium, The Society's Silver Medal.

Dried Fruits—For the largest and best collection of, with full description and expense of process,

Premium, The Society's Silver Medal.

Canned Fruits—For the largest and best collection of, giving full description of process and expenses;

Premium, The Society's Silver Medal.

Premiums are subject to the general rule of restriction, that where objects are not worthy, prizes will be withheld. No State, Society or individual can compete for more than one premium with the same variety or varieties of fruits.

Propagation by Budding.

AS the season for budding approaches, we presume a chapter on the subject will be acceptable and timely to such of our readers as have not familiarized themselves with this interesting and useful art. As an aid in multiplying established and valuable varieties, budding is an art at once valuable and fascinating to the intelligent and progressive fruit grower. Aside from the propagation of fruits, every lady should have, under her especial care, at least a few rose bushes, and should understand how to multiply her stock by this light and fine accomplishment so easily acquired. For the speedy and sure propagation of trees and shrubs, budding has some decided advantages over grafting. It requires only a single bud; and if a bud fails the first time, the operation may be repeated the same season. Or, if an entire failure one season, the growth of the stock is not lost.

Budding consists in introducing the bud of one tree, with a portion of the bark, and with, or without, a little adhering wood, beneath the bark of another tree. The work should be done while the stock is in a state of vigorous growth. Shoots of the current year's growth, containing the buds, should also be cut, when so mature as to be rather firm and hard in texture—usually in the best condition after the terminal bud has been formed. If taken off before, the best ripened buds, near the base of the shoot only, are suitable. To prevent withering, cut the leaves off, for if not removed, they speedily absorb the moisture from the shoot, and thereby weaken the vitality of the bud. Leave about one-fourth inch of the foot-stalks of the leaves, when cutting them off, to serve as handles to the buds while inserting them. After being thus divested of the leaves (fig. 1), they may be safely kept for some days in a cool, damp place, or sent a long distance in damp moss, or carefully encased in very thin oil cloth. On the question of taking out or leaving in the wood that is cut off with buds, there is a difference of opinion. On this point we take middle ground—



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

that is, in budding early, or, when the bud-shoots are comparatively immature, leave the wood in, but when well matured take it out or leave a very thin piece attached. Buds set very early or very late, when the bark of the bud does not separate freely from the wood, should, perhaps, have it left in, but in *all* cases we have found it

advisable to take off as little wood as possible—nor need there be, with good sized shoots, but a trifle, if any, save just at the root of the bud. To the novice the removal of the wood, without injury to the root of the bud, is a delicate operation, and often results in failure and discouragement. A little care and perseverance, however, on the part of the operator, will enable him to overcome this difficulty.

There are two conditions of plants indispensable to success in budding; *first*, a thrifty growth of the stalk so that the bark will slip freely; *second*, good, ripe buds, which may generally be known by their perfect development at the base of the leaves, and by the shield or bark to which the buds are attached, separating easily from the wood—and in short by the general firmness and ripeness of the shoots.

Plums and cherries should be budded early, whilst peaches may be set the latter part of the budding season—even into September some seasons. Apples and pears may be set from the beginning of the budding season—if the buds are ripe—until the last of August, though the early part of the month is the best time. However, the time for commencing operations, in the budding line, varies considerably, according to the season. It answers as well to begin the 15th or the 20th of July, in some seasons and localities, as the first of August in others.

Before commencing operations, have your bud sticks in readiness, and a thin, keen edged knife, with a supply of material for tying up the buds. For this purpose, the inner bark of basswood or elm are perhaps the best material for bands; corn husks, cotton wicking and woolen yarn are also used with success.

Having selected a smooth place on the stock upon which the bud is to be inserted, preferring the north or east side, make a perpendicular incision through the bark an inch or more in length, and at the top of this a cross cut, as in fig. 2. Then with the point of the knife, or with its half, if you have a regular ivory handled budding knife, raise or loosen the bark from the stock on each side of the incision, being very careful not to bruise either the bark or sap wood beneath, as in fig. 3. As speedily as possible, and with a clean, smooth cut, take off a bud, as in fig. 6, from a stick of buds with a very little wood attached, fig. *a*; when this wood is loose it may be removed by putting the edge of the knife under, and between it and the bark, and lifting it up, taking care not to pull out the root of the bud, fig. *b*.



Fig. 5.

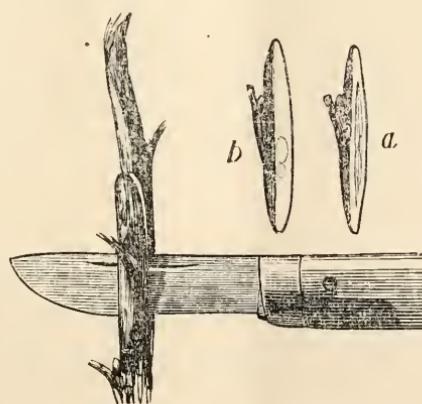


Fig. 6.



Fig. 7.

Then lift up the bark at the top of the cut and insert it, which, with the aid of the foot-stalk, should be pushed down to the bottom of the incision. If the top reaches above the cross cut, cut off so as to fit exactly, fig. 4. A bandage, as in fig. 5, should be wound evenly and snugly, and tied over the whole except the bud and foot-stalk, which must be left exposed.

Care and expedition must be used in the operation to insure success, for if the parts are bruised, or suffered to become dry, they will not unite. If the foot-stalk remains fresh and green and the bud plump ten or twelve days, it indicates that the bud has taken. In two or three weeks, or as soon as the union is perfect, the bandage should be loosened, and if the stock is much swelled removed.

In budded seedlings near the ground, cut off the stock in the spring five or six inches above the bud. It is not safe to cut close, as the stock will die down some distance. To secure a strong upright growth, tie the new shoot when a few inches long to this stump, fig. 7, for the course of four or five weeks no further support will be needed, when the stump may be wholly cut away and the wound allowed to heal, by the rapid formation of new wood.

On the whole, in cutting the bud, we rather prefer to insert the knife below instead of above and make the cut upward. An upward cut gives to the bend of the bud a better point for insertion. With these very plain instructions no one of ordinary tact need fail of becoming an expert in budding.



The High-bush Blueberry.

E.D. WESTERN HORTICULTURIST: I should like to learn through THE HORTICULTURIST, or otherwise, if the High-bush Blueberry can be profitably grown for market on our mucky prairie soil. If so, where, and at what price can the plants be obtained; or if they can be raised from the seed.

I appreciate highly the monthly visits of THE HORTICULTURIST, and the information it brings; but I wish some of your correspondents would not be so modest about giving the names of parties and localities. It is profitable to know the latitude of fruit growers, though isothermal lines do not always follow parallels of latitude. A correspondent often writes of what varieties of a fruit are hardy of those he has tried, but does not make mention of those that may have failed. So if the reader has a pet sort in mind he does not know whether the writer had it among his tender ones.

SILAS G. GOSS.

Border Plains, Ohio.

REMARKS.—We have the High-bush Blueberry growing upon our grounds, high dry soil, from plants brought from the pastures of New Hampshire some years ago, where it seems adapted to both wet and dry land. The plants may be grown from seed. We do not suppose they are to be found on sale at any nursery.

Fruit in Minnesota.

ED. WESTERN HORTICULTURIST: I have delayed a report to learn the extent of damage done by the last winter, and in the meantime see what stood best of the hundreds of varieties on my grounds. The winter was the hardest I have ever seen in the State, having spent twenty winters here, and for nineteen years had trees on trial. Of the first 350 apple trees set, one only remained up to the last winter, but now is dead, also many others that had stood unharmed for ten to fifteen years shared the same fate. The past winter has taken the term (iron clad) from many varieties, nothing entirely unharmed, but, of course, some more injured than others; and cannot advise the rejection of anything from its last winter's fate, as a like winter may not again occur in the next hundred years. But those that stood best, and will bear fruit on trees that are large enough to bear, are, as to hardiness, about as follows: Wealthy, Duchesse, Fameuse, St. Lawrence, Green Newtown Pippin, Tetofski, and Early Pennock, with a few late seedlings, the fruit not having attracted special attention. The average hardiness of crops was a little better, though all making a strong growth were hurt more or less, making them a more easy prey to the ravages of the blight, that has struck in at a fearful rate, and a month earlier than ever before, having begun in May; and the frequent rains and sudden changes favorable for its continuance.

Our seedlings grown from the Duchesse, the Wealthy, and our best crab, of which we have more than a thousand, bid fair to stand any degree of cold; and no doubt but, out of the multitude, will get some extra fruit that can be relied on as far north as trees grow. Certain, many of the seedlings are more hardy than grafted trees from parent stock of the same age—the past winter having made no impression on many of the most thrifty.

A few remarks as to the Wealthy, a seedling of my own growing, would not be amiss just here, seeing it is first on the list of our most hardy varieties. Some may suppose I have an axe to grind, but I have neither trees nor cions for sale, nor any interest in its sale, other than as I sell fruit from our orchard trees, as I have planted largely of it, and will graft and bud many more now in orchard row of less value. Tree rather a strong grower, forming a handsome head, early into bearing, and bears profusely every year; fruit large, unsurpassed in beauty or flavor, so far as we have seen or tasted; season, early winter, with care will keep all winter; propagated by the most of nurserymen in the northwest. No one need apply to me.

Pears all killed near to the ground, that are not entirely dead. Grapes that were covered, all right; others all dead to the ground, but putting out new shoots, not injured in root. Raspberry vines partially injured, only a moderate crop. Cherries a failure this season, but trees not killed. Native plums promise a fair crop.

Excelsior, Minnesota, June 9, 1873.

PETER M. GIDEON.



RAISIN GRAPES.—In view of the great success of raisin grapes, and the demand for cuttings in California, the *Pacific Rural Press* cautions purchasers to be on their guard against unscrupulous vendors of spurious sorts.

How to avoid Risk from Frost.

THE frosts which occurred in some parts of California early in April, and which for a time threatened serious damage to the grape crop of the current year, have called out investigations that may be of good service to vineyardists in the future. A correspondent of the *Pacific Rural Press*, writing from Anaheim, May 11th, reports the vineyards again in full foliage, and thus notes the effects of the frost:

"The frost of the 4th and 5th of last month (April) were said to be the most severe ever felt in this part of the State. The thermometer on the morning of the 5th, at Anaheim, was down to 28° Fahrenheit, which is the lowest point it has reached at any time during the past three winters, and then on not more than five or six occasions. Therefore it is safe to conclude that anything which escaped injury, on this occasion, might be considered safe in the future."

"Previous frosts have been partial, affecting only certain vineyards and parts of vineyards, and no facts were developed upon which to base a theory; but this was general, no vineyard escaped, but some were much more seriously affected than others. A close and earnest investigation developed the following facts:

"The vineyards protected by thick hedges of trees were the most severely frosted, and *per contra* those more open to a free circulation of air, were the least severely frosted, those near buildings or planted among the fruit trees (trimmed up so as not to prevent a free circulation of air), entirely escaped.

"The Anaheim vineyards for greater convenience of cultivation are trained low, rarely raising more than two feet above the ground; this I am certain is a mistake, for I have long observed, *that the closer to the ground*, the greater the damage from frost. In proof of this I noticed that vines trained upon trellises, in the open vineyard, to a height of from four to six feet, entirely escaped, whilst the surrounding vines trained low as usual were all badly frosted; with the exception of the difference in elevation the conditions were exactly the same; there were several instances of this, with, in all cases, the same result.

"The frost was much less severe on the mesa or table lands, which is owing to the elevation; the low-lying lands are always the worst frosted.

"My young tomato plants growing in boxes raised three feet from the ground, were scarcely touched and not materially injured, proving a wise foresight in raising them up; the volunteer plants growing on the ground were killed.

"The Mission priests were probably aware of this fact, for they, so far as I have seen, invariably trained their vines from three to four feet high. They were very intelligent observers, and rarely did anything without being able to give a good reason for it."

FRUIT IN TEXAS.—Mr. Wm. Watson, of the Rosendale Nurseries, Brenham, Texas, writes us, May 28: "I thought perhaps you would like to know when our early Peaches ripen. We had the Early Beatrice ripe May 19, and Hale's Early the 22d. We have now upon my place, ripe peaches, cherries, raspberries, strawberries and blackberries, and to-day I have gathered some nice Doyenne de Eté pears, ripe and good. We have the finest growing weather I have ever seen here. Common field corn in tassel, and of the early kind we have roasting ears. Grapes are full.



Editorial Notes.

A Word About the Patrons of Husbandry.

We at first looked with suspicion upon the formation of this species of Agricultural Society, feeling that it might in time develop some purpose or personal motive in the minds of the leaders which would debase the objects of the membership. Thus far we have seen nothing particularly to criticise, and much to commend. The leaders in chief have been singularly quiet; we have not yet seen any manifestation of intention to use the Granges for any wire-working, for private interest, or public jobs; and viewing the order from an independent stand-point, we admit that it is capable of doing great benefit, and has already done a vast amount of good. Being confined exclusively to farmers and their families, there is a unity of purpose and interest, there is no diversity arising from the presence of the interests of other occupations. It is stated that one-third of all the grain elevators and grain warehouses in Iowa are owned or controlled by the Granges; and no less than 5,000,000 bushels of grain were shipped to Chicago on Grange account prior to December last. The number of cattle and hogs shipped in the same manner is enormous, and the reports received from all these shipments show an increased profit to the farmers of from ten to forty per cent., as compared with the usage received at the hands of the average "middleman" in times previous. In the matter of purchasing agricultural implements direct from the manufacturers, the Grange purchases of the State have saved the farmers, by actual computation and comparison of the price at the implement stores \$365,000. For instance, one class of reapers rating at No. 1, retailing at \$240, was sold to the Grange, in fours or more, at \$140, a clear "save" of \$100 on each machine.

The Western farmer has been plundered so much by all the various middle agencies, between him and the Eastern market, that it is no wonder they have arisen and placed themselves in defence. They are right, and we can now witness from their number the influence they can exert, if necessary. Reliable estimates now state the number to be over 2,000,000 members, which will be increased to 3,000,000 before next January.

We warn the Granges against all political tendencies, nor to permit wire-pulling or log-rolling among them, or their influence will decline.

Preserve their organization solely for the purpose of society, to correct existing abuses; to provide clearer and more judicious systems of agriculture; to help the farmer procure a better market; to save him from exorbitant profits in the purchase of his implements, and the organization will always be a grand power for good. It is perfectly proper that the Granges may use their influence to turn seamps out of office, and secure the election of honest citizens, but this must be incidental, not a primary object. We shall watch the progress of the association with much interest. As yet, it is unknown in the Eastern States. We think it would not be appreciated here, in fact of but little use.

The Garden City of Europe.

Although Americans are apt to boast at many signs and facts of superiority over Europeans, yet in the seed trade there must be a very large allowance of prudence in statements.

The city of Erfurt, Prussia, is surrounded with so many immense horticultural establishments that it has been called *The Garden City of Germany*. The area devoted to horticulture in and around that city is over 1,200 acres, of which 400 acres are market gardens. There are 27 firms who do a wholesale trade, besides 120 market gardeners, who employ in all over 500 hands. Over 300,000 catalogues and price lists are issued annually.

In the neighborhood of Rochester or Geneva, N. Y., the acreage devoted to horticultural occupation is undoubtedly much larger, but it is a question whether the amount of trade is as great.

A Children's Flower Show.

In November last several gentlemen in Manchester and Salford, England, formed themselves into a society with a view to encourage a taste among children for the cultivation of pot flowers. They accordingly purchased a number of plants in pots, and gave them to boys and girls who were likely to be assiduous in cultivating them. The first show of the flowers thus given was recently held, and about 250 children brought their plants for exhibition. The collection embraced tulips, hyacinths, etc., some of which were very beautiful. Prizes of flower seeds were given to the boys and girls whose plants were in the best condition. The idea is certainly a good one.

View in Victoria Park, London.

The sketch given in our frontispiece this month represents a lake in Victoria Park, London, with pagoda islands in the distance. As mentioned in a descriptive article by *The Gardener's Chronicle*, it is one of the best views in the park, and shows how happily materials may be blended together in a small area, so as to form a beautiful picture. The water here does not occupy six acres, yet the outlines are very distinctly marked, and from the beauty of the finely formed trees which border the water so closely, it appears much larger. The park contains many fine trees. The island itself is rich in willows, many of them new varieties—the *Salix Babylonica* or Weeping Willow being much the most numerous and fine.

The Chinese pagoda, in the back ground, is that which was shown in the great International Exhibition of 1851.

Congressional Aid to Forest Tree Culture.

Although we have not yet seen the act, yet definite information is now obtained of the fact that our last U. S. Congress passed an act to the effect that any one who will plant and keep in growing order for five years, not less than forty acres of trees, shall be entitled to one hundred and sixty acres of the public domain to which the planted quarter or section belongs. It is said that the act only specifies that the trees shall not be more than eight feet apart.

California Flower Season.

A correspondent at San Jose, California, writing early in January says:—"In this balmy western land, we sit to write by open windows, inhaling the perfume of heliotrope and mignonette. Daisies sparkle in the sun after the early shower. The fall-sown Italian and lawn grasses have covered the brown soil with tenderest green. Springing wild grasses are clothing the distant hills. Singing birds at this sweet morning hour fill the ever-green oaks with melody. Down the street, door-yards are bright with pinks and pansies. Hundreds of porches are festooned with delicately tinted roses. Scarlet geraniums and fuchsias climb luxuriantly through fences and over walls. Petunias, verbenas and the royal calla-lily are as common as morning glories were in the States twenty years ago. In the gardens and on the lawns of the

wealthy, we find the golden blossoms of the acacia, the scarlet berries and graceful foliage of the pepper-tree and fine oleanders in a perfect blaze of roseate bloom. Our busiest Spring time of seeding and planting is here. Farmers are busy with plow, harrow and drill; the orchardist and the vintner with pruning-knife and shears."

American Pomological Society.

The coming September meeting will be, we believe, the finest ever held. Boston is on the *qui vive* to prepare an immense treat for her horticultural visitors. Sundry projects are in preparation, which we cannot now name, but will add great *eclat* to the executive ability of the managing officers.

Important Editorial Excursion.

A large party of Eastern and Western editors of the agricultural and horticultural press unite this summer in a grand excursion to the newly opened sections of Virginia, Texas, Indian Territory, Kansas, Colorado and Utah. The railroad companies have united in the extension of the most cordial courtesies, and for the most of the route, covering 6,000 miles, special trains have been provided. Indications point to it as the most successful editorial excursion ever leaving New York.

Peach Crop of Delaware.

Peach culture on the Delaware peninsula has developed with such rapidity in five years that it is unequalled in magnitude by any of the fruit sections of the world.

The number of peach trees now on the peninsula, as gathered from last reports, is 5,000,000—representing fifty thousand acres. The value of land devoted to peach orchards, averages \$50 per acre, and the average annual income does not exceed \$50, although in many cases \$200 or \$300 per acre are realized. Estimates from most reliable sources indicate that the peach crop of 1873 will be about 2,500,000 baskets; half of the crop of Delaware, in the northern half of the State, have had their buds entirely killed the past winter; were the entire number of trees on the peninsula to bear a full crop once, it would be fairly enormous.

We sincerely hope these enthusiastic peach growers may have a most abundant crop, and then, after it is all over, sit down and reflect: *Does peach culture pay when everybody is going into it?* We have felt so for several years, that too many trees were being planted, and peach growing for the next five years would not be even as profitable as devoting the same ground to potatoes. The peach crop also effectually spoils the sale of other fruits which ripen at the same time. So much so that growers of other fruits often wish there never was a peach. It seems as if the peach growers did not make much money themselves, and did not allow others to make any also. Peach culture in Delaware is effectually overdone.



Floral Notes.

During the meetings of the Massachusetts Horticultural Society, last year, some very excellent and interesting displays of new flowers were contributed from time to time, of which we make the following note:

Narcissus Bulbocodium, exhibited by E. S. Rand, jr., more familiarly known as the Hoop Petticoat Narcissus. This is one of the neatest and most elegant of the genus, with rush-like foliage. There were two bulbs in a pint pot; they had six flowers, with a numerous quantity of buds. The plant shown was raised in a window, it is of the easiest culture, and is a great acquisition to our window plants.

New Mignonette.—Some very fine hybridized varieties of Mignonette, from Parsons New White and the Giant Crimson varieties were exhibited, one of which

had a spike of flower over nine inches long, which was very fragrant; another showing the hybridization between the two very distinctly, with spikes of flower no larger than the common varieties, but much more free flowering, which will undoubtedly prove a valuable variety for forcing.

New Geranium.—W. C. Strong & Co. introduced a new Zonale Geranium. Sir Robert Napier a very distinct variety; also, *Thalictrum adiantoides*, an elegant plant of which the leaf fronds are of exquisite beauty, rivaling the Maiden Hair Fern. This must prove a valuable plant.

Azaleas.—Mrs. T. W. Ward exhibited two single specimens—Standard Azaleas, Princess Mary of Cambridge and *pelargoniflora*—the first one receiving the Silver Medal for the best single specimen. These plants were grown on a single stem, some four feet high, from which branched out a handsomely trained head, at least three feet across, in full flower, well intermixed with luxuriant foliage. The effect was very fine, and these are probably the best standard Azaleas that have been exhibited.

Wistarias.—Francis Parkman exhibited cut flowers of single white and purple Wistaria; also, a fine double purple Wistaria, which is perfectly hardy, having been thoroughly tested by Mr. Parkman. It is similar in all respects to the single ones, except that the flowers are perfectly double, which give the cluster a compact appearance. It is a great acquisition.

Best Six Dracennas.—Mr. C. S. Sargent received a prize for the following six best specimens of well grown varieties: *Dracæna terminalis*, *robusta*, *cannæfolia*, *Braziliensis*, *Cooperii*, and *indivisa lineata*.

Seedling Candytuft.—A very fine Seedling Candytuft was exhibited named "Giant," specimens of which measured from three to eight inches in length. Mr. Tailby began saving the seed some eight years ago, and by carefully selecting only the best for seed, has succeeded in raising this truly giant variety; it has been exhibited several times during the season and fully sustains itself as an improved variety; it has been awarded a First-Class Certificate of Merit.

Peristrophe Angustifolia acrea.—A new plant from Japan, exhibited by W. C. Strong & Co. It is a fine growing, compact plant, well suited for decorative purposes.

Aquilegia carulea.—Louis Guérineau exhibited a splendid branch of flowers of *Aquilegia carulea*, of a clear bright yellow; this is undoubtedly the greatest acquisition to this useful class of herbaceous plants, and was awarded the Society's Silver Medal.

New Gladiolus.—Mr. J. S. Richards displayed a fine collection of seedling Gladiolus, many of them far excelling the European seedlings. The seven here named have been selected as being worthy of a place among the best of named varieties.

The Bride, large, fine, pure white flower, splendid form, long spike, flowers open together, by far the best white.

Edward S. Rand, Jr., tall spike of cerise flowers; large open flower, upper petals with distinct white centre lined and tipped with carmine; lower petals strongly marked with rich lake.

General Washington, a deep cherry rose, flaked with darker and lighter markings.

Joseph Breck, light rosy pink, with dashes of carmine and lake.

Francis Parkman, rich crimson, with pure white throat, the white extending in lines through the centre of each petal, a very showy flower.

General Sherman, glowing crimson, with lighter throat and yellowish markings; on lower petals a dazzling flower.

Scottish Chief, upper petals pink, dashed with carmine ; lower, pure white tipped, and sometimes dashed with carmine, a large flower, but not perfect in form.

They were awarded the Society's Silver Medal.

Floral Decorations for the Table.

Ferns and Mosses are among the most useful things for the decoration of the table, and even such a common thing as the Male Fern (*Lastrea Filix-mas*), which may be found in the hedgerows in almost every parish, is of great value for forming a fringe to the dish of a stand or centre piece. Equally valuable is the native Welsh Polypody (*Polypodium vulgare cambricum*), which makes a nice change with the Male Fern, the handsome fimbriated edging to the fronds adding to its worth. It is by no means so common as the Male Fern. That charming greenhouse Moss, *Selaginella denticulata*, is another useful thing for the purpose. I use plants taken out of small pots to fill the base of a stand, and fill up between the balls with silver sand, using about four plants for the purpose ; and with the sand I mingle some powdered charcoal to neutralize the effect of any offensive smell that will sometimes arise after the plants have been placed in the sand several days. After a sprinkling has been given to settle the sand about the roots of the Moss, the branches should be pegged down neatly with small hair-pins. If watered about once a week, the Selaginella will grow very nicely, and keep beautifully green for two or three months together. Scarlet Pelargoniums and other flowers can be stuck in the sand by their stalks to give a finish to it. That popular form of the Maiden-hair Fern, *Adiantum cuneatum* — perhaps one of the most lovely of the Ferns, notwithstanding that it is common, and always a great favorite with the ladies—is also of great value, and makes a beautiful fringe for the top dish of a design, it being so light and graceful. Some five or six years ago Mr. Charles Turner, of Slough, was a competitor at one of the Crystal Palace exhibitions with a vase of Roses, and by way of giving a finish to his vase he used fronds of the Maiden-hair Fern among his Roses, which was a great improvement on the formality of a bunch of this favorite flower, but the vase was disqualified by the judges in consequence. Now, it is the custom for the schedule of prizes to state Ferns can be used, and no disqualification follows as a consequence ; and the same thing also holds good at South Kensington as well as Brighton.

There are certain plants that are very useful for twisting round the upright stem of a stand used for the decoration of the dinner-table ; and branches of these should be stuck in the sand, and then be neatly and elegantly twisted round the stem ; and a few ties should be placed up the stem at intervals to keep it in its place—fine thread or wire can be used. The Japanese Honeysuckle, *Lonicera aureo-reticulata*, is one of the best for the purpose ; so is *Dioscorea batatas*. The common Ivies I find to be too heavy. *Tradescantia zebrina* is a nice thing to hang over the top dish, especially if some cuttings are placed in a 32-sized pot in some light sandy soil, and allowed to hang over the sides of the pots till rooted, and then shaken from the soil and laid round the dish, with a little silver sand about the roots. The heads of the plants should hang over the sides, and they will grow freely, and last for six months if required. Of pendulous growth, and variegated foliage, the effect is charming and effective. The silvery-leaved *Centaureas candidissima* and *argentea vera* make a nice change, and the leaves can be used to make a layer inside the Ferns in the bottom dish. Besides the scarlet-flowering Pelargoniums, the white-flowering ones, like Madame Vaucher, as well as the sweet scented kinds for the perfume the leaves yield, are also very desirable. The flowers of the scarlet and yellow Nasturtiums last a long time in the wet sand. Verbenas make a nice change in their season, and especially Roses ; the flowers of these should be cut young in the morning when the dew is on them.

Such stands as these are never complete without light-green foliage of some sort or other, such as the different kinds of ornamental grasses in their season, and the tops of some of the meadow grasses in the autumn. In the same way sprigs of

Asparagus from the kitchen garden are very useful; so is the foliage of *Tamarix gallica*, a hardy deciduous shrub; also *Humea elegans*, and suchlike. Variegated plants work in well; the *Iresine*, with its handsome mottled red leaves, keeps well in the sand; so do Coleuses and variegated *Pelargoniums*; of the latter, such as Mrs. Pollock, and the white Ivy-leaved kind, *L'Elégante*. Then there are blooms of *Gladioli*, *Asters*, *Chrysanthemums*, and many others, with stiff stalks to support them. In a general way, many of the flowers will last only one day, and I change the whole of them three or four times a week, but make a rule of looking the stands over every other morning. The sand should not be so saturated that the flower stems will not stand erect in it, or they are apt to fall out when the stands are removed from the table.—*The Gardener.*

Horticultural Notes.

Pruning Trees for Shape.

About this time last spring I had a visit from an Indiana farmer. He was a quaint looking old gentleman clad in home-spun "jeans," and with a profusion of black hair reaching down between his shoulders. I looked for nothing new to come out of that man; but as these warm spring days bring the pruning fever out of us country people, so this old gentleman found me slashing away among my young apple trees. He stood it like a hero until I had ruined the shape of one row of trees, when, bless his soul, how mildly he put it—first a suggestion that "that" limb might come out, then "if it was me I would take that one off." "Don't you think the tree would be better balanced if one of those two parallel limbs was taken out?" For once in my life I expressed no opinion but obeyed instructions, and when I stepped back and looked at that tree, it "gleamed like a diamond." Was it possible so little labor could create such symmetry? In about the time it had taken me to spoil one row, he perfected the rest of my orchard.

I asked him if he could teach me to do that other sort of thing. In his answer he affected no great amount of knowledge, but said it would take him about 100 years to be able to tell with any degree of certainty, what effect pruning the twig would have upon the matured tree. This was a little more time than I cared to devote to the subject; but this I did learn from him. You must first have in your mind the picture of a perfect tree, and then prune each tree to conform as nearly as possible to the proportions of that picture, leaving buds to produce limbs where they are wanting. But the great point in his design, to my notion, is his picture. He thought a perfect apple tree should have one main branch running up the center, and the other limbs forming as nearly as possible a tulip shape about the main stem.

This may not be the most approved form, but I never could trim under the directions of a book, while I can conform the most neglected tree to this design, and it lets the light and air into the tree with as much uniformity as any other design with which I am familiar. Every limb that points inward, and all those that touch others, should be taken out, and where two limbs form a very acute angle at the crotch, one should be removed as they are liable to split when loaded with fruit.—*Cor. Farmers' Home Journal.*

Raspberries.

The *Rural New Yorker* states that after a trial of one hundred different sorts, and fifteen years experience, there are now really no better and more profitable kinds than these: These famous old sorts, such as Miami, Doolittle, Franconia, Brinkle's Orange, Knevitt's Giant, and Hudson River Antwerp, have, as yet, no superiors. We have, it is true, made some progress in numbers of varieties, but have added no merits nor made any advance on the whole, but only in certain important qualities. The Clarke is certainly a richer berry than the Franconia, and

the plants a little more hardy; but the berry is too soft for market, and few persons would notice its superior flavor.

The Philadelphia is a larger berry than its probable parent, the Purple Cane, but it is inferior in flavor.

Among the Black-Cap varieties I shall save a row or two of the following:—Doolittle, Mammoth Cluster or Miami, Seneca, and Fay's Thornless.

The Best Early Beet.

The *New York Tribune* says that last year was the first that the dark red Egyptian beet was grown to any extent by gardeners near New York, and the results were so favorable, that those who can get enough seed will sow nothing else for an early beet this spring. With market gardeners this beet is a great favorite, and it will with them supersede the early blood turnip. The Egyptian is, at least, twelve days earlier; it can be prepared for market with one third the labor usually bestowed on the blood turnip, and last year the dark Egyptian brought twenty-five cents per dozen bunches more than any other variety of early beet in the market at the same time. The writer sowed the two varieties along side of each other, and watched the growth closely, giving both the same treatment, and the Egyptian came out as stated. At first there did not seem to be much difference in the growth. But just as soon as they began to make roots, the Egyptian took the lead and kept it.

There are hardly any small roots on this new beet when full grown, and therefore they require no trimming, can cut just as fast as pulled, be thrown into the wash tub and washed and bunched. With the other varieties of early beets that are grown for market, it takes just as long a time to trim off the small roots as it does to bunch, so that when the Egyptian is grown, all of this labor is saved, which is an important item with the active market gardener.

In quality, the dark red Egyptian is fully equal to the early blood turnip, or any other variety that is commonly grown for market. Until now, the early Bassano stood first on the list for home use, both for earliness and quality. Last year the writer missed sowing any seed of this variety, but will do so this season for the purpose of ascertaining how it compared in earliness and quality with the Egyptian. The Bassano will not sell in market, owing to its light color. But it has always been a popular table variety for home consumption.

Insects in Orchards.

In the discussion on insects at the late meeting of the Minnesota Horticultural Society, many interesting facts were elicited concerning insects in that State. Much trouble has been experienced with leaf lice, borers, moths, curculios, etc. A number of remedies were given for these pests. For leaf lice, a decoction of tobacco is sometimes successful, when applied at the proper season. A wash composed of three pounds of sal-soda dissolved in a pailful of rainwater, is another remedy, and also three ounces of whale oil soap to a pailful of water; apply upon the first indications of the lice. The trees will be injured if much soap is used. Carbolic acid will kill trees if not carefully used. Mr. Gideon binds ashes around the affected parts to kill borers. Others cut them out with a sharp knife, or punch them with a wire. Moths are destroyed in various ways. Several kinds of traps have been invented, some of which are very successful. The idea is to furnish a hiding place for the moths where they can be destroyed. Bands of hay or old rags are sometimes bound around the trunks of the trees to serve as moth traps.

Mr. Mendenhall stated that there are 1,600 kinds of leaf lice, and 400 kinds of curculio.

New Blackberries.

The following new varieties of Blackberries, grown on the farm of A. M. Purdy, Palmyra, N. Y., are mentioned by the *Rural Home* as worthy of further trial:

Laporte, growing wild at Laporte, Indiana. Plant, hardy, vigorous, productive.

Fruit early, medium in size, oblong, soft, sweet, excellent. Particularly noteworthy for its strong flavor of the wild blackberry.

Western Triumph—also a Western Blackberry, hardy, vigorous, productive. Fruit early, medium to large, oblong, very sweet. One of the best we know of.

A Promising Peach.

On the 23d of last month we received from Messrs. J. Capps & Son, nurserymen, of Mount Pulaski, Illinois, the following note: "We send you herewith a specimen of a remarkably early peach, which originated on the farm of Mr. O. A. Alexander, near this place. Ripe specimens were gathered on the 18th inst. It grew on a three year old chance seedling tree, and was about three weeks earlier than Hale's Early, and must prove to be quite an acquisition. In order to show the difference between it and Hale's Early, we also enclose a specimen (the ripest we could find) of that variety. We hope they will reach you in good condition. We call the new peach the 'Alexander's Early.' It is a free stone. These peaches were received in good condition—the Hale's Early but little more than half matured, the Alexander's Early in the perfection of ripeness. It was of good size, agreeable flavor, and of very dark color. The earliness of this peach is no more a marvel than its color, which is dissimilar from that of any peach we ever saw before. Besides these novel characteristics, the specimens received possessed the good qualities that all fine peaches should have; it was attractive to the sight, pleasant to the smell, and agreeable to the taste.—*Prairie Farmer.*

Cherries, Early and Late.

In New York and New England, says the *Pacific Rural Press*, we used to think we were doing well to get the Mayduke ripe, even as early as the last days of May, and more frequently by the 10th of June. The latest were from the middle to the last of July. Here we get Bauman's May as early as the 10th of May, and the Belle Agatha and Rumsey's Late, through the whole of August and extending into September. Why do not more of our fruit men turn their attention to cherries?

THE Adams Co., Ill., Horticultural Society recently "Resolved, That grape-growing does pay, and recommend the Concord."

ANDREW S. FULLER states that of the 500 sorts of strawberries he has tried, none have given him so much satisfaction as Wilson and Triomphe de Gand.

Editorial Notices.

Catalogues Received.

Vick's *Floral Guide*, No. 2, 1873.

Catalogue of Stove and Greenhouse Plants—E. G. Henderson & Son, London, England.

Catalogue of Plantes Nouvelles—J. Linden, Gand, Belgium.

Retail List, New and Beautiful Plants—William Bull, London, England.

Spring Catalogue of Seeds—Dick Radelyffe & Co., London, England.

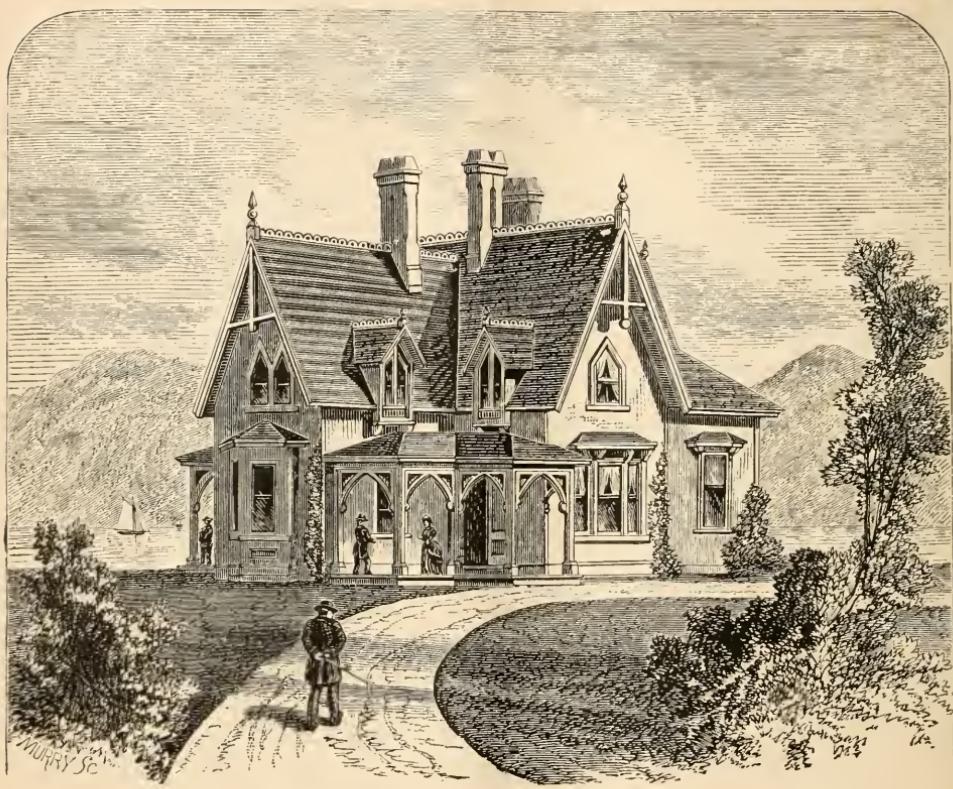
Annual Catalogue of Flowering Plants—William H. Coe, Lock Haven, Pa.

Exhibition of the Newburgh Bay Horticultural Society.

The thirteenth annual exhibition of this Society will take place at Newburgh, on the Hudson, September 23 to 25, 1873.

Zell's Monthly Magazine.

Copies have been forwarded to us of this new claimant for popular favor. Devoted largely to history, travels and natural history, as well as lighter literature. Contains much that is valuable and interesting; although we cannot judge thus early of its ability to gain ground among so many of more popular notice. Published by T. E. Zell, Philadelphia, Pa.



RIVER COTTAGE.

THE Horticulturist

HENRY T. WILLIAMS.

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E. SEARS, SC.

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NO. 326.

A River Cottage.

THIS cottage, designed by Mr. R. G. Hatfield, architect, of New York, is intended to be located upon a sharp declivity where a fine view, either upon a river or extended valley, is to be had from the lower side.

It has, therefore, a road front and a river front—the former having the entrance porch extended out beyond the line of the house, to answer the purpose of a porte-cochire, and the latter provided with an ample veranda connected with the lower lawns by a flight of steps.

On the principal story floor the entrance is on the south side of the central gable, into a large stairway hall, 15 x 16 feet, from which doors open into all the rooms. At the center is the parlor, which extends out on the river front, and by its end and side windows affords a view either up, down or across the water; the size of this room is 16 x 22 feet. The parlor opens at the left into the library, which is 14 x 16 feet, and has a bay window at the south end; and at the right into the dining room. This room is 15 x 18 feet, and opens in front into a pantry, 10 x 16 feet, containing a dumb waiter descending into the basement, a private stairs leading down to basement and up to second story, cupboard, shelves, etc. All the windows opening on the veranda should descend to the floor.

The second story contains six rooms. Over the parlor is the principal chamber, which is 16 x 22 feet, and has three corner closets. This opens into a small child's room, on the left, which is 7 x 9 feet. The three other small bedrooms are 8 x 14, 8.6 x 15, and 8.6 x 9 feet, respectively. The bath room is in the stairway hall, and is 6 x 11 feet; it contains the bath and water closet.

The basement contains, on the right, the kitchen, 14.6 x 17.6, provided with pantry, closet and store-room in front; at the center the laundry, with wash trays, closet, stove, etc.; on the left, the cellar for fuel, etc.; and in front, a passage containing a

water closet, the furnace, etc. There are two exterior doors, one opening from the cellar, and one from the kitchen, the latter inclosed in a lobby.

The side of the basement towards the river is entirely above ground.

The height of basement is 8 feet; of first story, 10 feet; and second floor, $8\frac{1}{2}$ feet in the clear when finished.

The walls of the basement, where against the ground, should be built of stone, and the side where above ground, towards the river, may be of brick.

Above the basement the building is of wood, but should be filled in with brick to the roof, as its position is evidently one of great exposure in winter, and it could scarcely be made comfortable without.

The detail of the finish, both on the exterior and interior, is intended to be plain, leaving the good effect to depend rather upon good proportion than embellishment. The cost would depend upon local advantages, and would average \$5,000.

This design appears in new edition *Downing's Cottage Residences*.



Winter Damage to Fruits and Trees in Iowa.

BY SUEL FOSTER.

SINGULAR, indeed, are the freaks of Nature. No two seasons are alike in degree of cold. If the thermometer measures the extreme of two winters alike at 25° below 0, yet the number and severity of cold days will differ. The same degree of cold, with the wind northeast, will be more severely felt by the animal, than when the wind is dryer from the northwest. But the dry long freeze is more severe on vegetable and tree life; *it freezes dry*. I have seen the ground freeze up very dry, and continue dry and hard frozen, the moisture all the time being exhausted, causing great destruction in nurseries of small trees; whilst larger trees, that struck their roots deeper, lived and were comparatively little injured.

Last fall we had sufficient rain to wet the ground eight or ten inches deep, to which I attribute the cause of my young nursery trees coming through the very severe, long, freezing winter, with so little injury, greatly assisted, also, by the slight covering of snow and ice commencing the 20th of December. A peculiar effect of the hard winter has very much surprised me, in finding the Ben Davis apple tree very much injured, so much so, that whilst it bloomed full, it has not life and action enough to grow the embryo fruit after the flower had fallen. This is often the case with many varieties after such a hard winter; but this Ben Davis has so long been classed among the hardiest, that it is put in the lists for Northern Iowa, Wisconsin and Minnesota. On the other hand, the Wagner, which I have often seen very much damaged by less severe winters, comes out green and bright this spring, setting full of fruit.

These are exceptions to the general rule, and when we see such peculiarities we may note them, and look back to the general established character, wherever that character has become established. I repeat, that most of my orchard trees that show damage at all, show it more in the orchard than in the nursery. Whilst I have named two varieties which seemed to depart from the general character, the one more injured, the other less, yet I find the greater number continue true to character.

We cannot afford to discard some of our valuable varieties because they have got this mark of not being perfectly hardy this testing winter. The Maiden's Blush, Jonathan, Domine, and Striped Pippin are damaged this winter, and have been before, yet they have proved profitable.

Among the new varieties that I have fruited and found valuable, and have proved hardy this winter, are Alexander's Early, Warfield, Duchess of Oldenberg, all full of fruit. Fountain Hill, a seedling of my raising, is hardy and productive, a very choice apple from September to January; will keep with the Rambo, and a better tree and fruit every way. Goff, a most perfect tree, very productive, fruit of largest size, fair and handsome, very sound, good for market and *cooking*, Sept. Blackley Pippin, first rate, early winter. Jefferson County: Some with high expectations, not fruited by me. Armstrong, brought from Pennsylvania by Rev. John Armstrong, a good apple, keeps till summer; stood this winter well. Wealthy, a native of Minnesota, as hardy as need be; a very good apple, fall or winter. Pears considerably damaged; light crop. Cherries slightly damaged; medium crop. The English Morello is proving as hardy as Early Richmond, and a better cherry every way, two weeks later, thus extending the cherry season.

Grapes: Concords, Ives, Martha and Clinton. Others have mostly failed. Ives earlier than Concord; Clinton, to keep late in the fall; Martha, a white and very sweet grape.

Small fruits badly damaged, and we shall have a scant supply. I saw, on Mr. Barnard's grounds, the Bernard Blackberry stood the winter very well, and promises to be the blackberry for our use. A native of Ohio, found by his brother in the woods.

Muscatine, Iowa.

Pleasure from Planting Trees.

CAPTAIN Basil Hall, many years ago, while on a visit to Abbotsford, wrote: "People accustomed to the planting of trees are well aware how grateful the rising generations of the forest are to the hand which thins and prunes them. And it makes one often melancholy to see what a destructive waste and retardation goes on by the neglect of young wood; how much beauty is lost; how much wealth is wantonly thrown away, and what an air of slovenliness is given to scenery which, with a very little trouble, might have adorned and embellished, not to say enriched, many a great estate."

"I never saw this mischievous effect of indolence more conspicuously made manifest than in a part of the grounds here. Sir Walter's property on one side is bounded by a belt of trees, say twenty yards across. The marsh runs directly along the center of this belt, so that one-half of the trees belong to his neighbor, the other to him. The moment he came in possession, he set about thinning and pruning the trees, and planting a number of hardwood shoots under the shelter of the firs. In a very short time the effect was evident. The trees, heretofore choked up, had run into scraggy stems, and were sadly stunted in growth; but having now room to breathe and take exercise, they have shot up, in the course of a few years, in a wonderful manner, and

have set out branches on all sides, while their trunks have gradually lost the walking stick, or hop pole, aspect which they were forced to assume before; and the beeches and oaks and other recent trees are standing up vigorously under the genial influence of the owner's care.

"Meanwhile the obstinate, indolent or ignorant possessor of the other half of the belt has done nothing to his woods for many years, and the growth is apparently at a stand in its original ugliness and uselessness. The trees are none of them above half the height of Sir Walter's, and a few, if any, half their diameter.

"So very remarkable is the difference, that without the most positive assurances, I could not believe it possible that it could have been brought about by mere care in so short a period as five years.

"The trees on the one side are quite without value, either to make fences or to sell as supports to the coal pits near Berwick, while Sir Walter's reap a great profit from the mere thinning out of his plantations. To obtain such results it will be easily understood that much personal attention is necessary, much method, and knowledge of the subject. It happens, however, that in this very attention he finds his chief pleasure. He is a most exact and punctual man of business, and has made it his favorite study to acquire a thorough knowledge of the art.

"His excellent taste in planting has produced a very important effect. In laying out his plantations he was guided partly by a feeling that it was natural and beautiful, to follow the 'lie of the ground,' as it is called, and partly by an idea that, by leading his young wood along pastures and gentle slopes, he would be taking the surest course to give it shelter. But though he had only the prosperity and picturesqueness of the wood in view, he has also, he finds, added to the value of the adjoining fields that remain unplanted. The person who formerly rented one farm, came to him, and offered to take the unplanted part again, and to pay the same rent for it as he had originally paid for the whole, although one-half of it is now a young forest, and effectually enclosed. On Sir Walter's expressing his surprise at this, the man said that both for growing corn and for the pasture of the sheep, the land was infinitely improved in value by the protection which his rising woods and numerous enclosures afforded."

Orange Culture in Florida.

BY AL FRESCO.

MUCH has been written and published regarding Orange culture; and it is a matter of conviction that many persons have regretted engaging in the pursuit. Since the close of the civil war there has been a sort of mania on the part of some to engage in Orange culture, and the majority have failed. Strangers visited the groves at Mandarin Orange Mills, Palatka and Enterprise, ascertained the pecuniary results, contracted the orange fever, planted groves, and as an evidence of the results I shall merely cite one case. In the summer of '69 I visited St. Augustine, and on my return was detained for several hours at Picolata. This point had been an old settlement; the land worse than exhausted by repeated cropping. To occupy time I examined the locality, and found that an enterprising Northern man had started a

grove. From the worse than impoverished condition of the soil, defective culture, abundance of weeds, and the jaundiced appearance of the foliage of the stocks, I predicted failure. Two or three years after, we noticed in the proceedings of the Farmers' Club, the doleful yarn of a Mr. Somebody who had engaged in Orange culture at Picolata, and had failed. The communication contained a lamentable description of the State, the soil, real estate agents, the people, and Orange culture in particular. But the failure of such a person is no evidence that the culture of the Orange is not profitable, or that the State is not a desirable place for the enterprising emigrant, with the necessary tact, perseverance and knowledge, to insure success.

The proper persons to engage in Orange culture are those possessing a sufficient amount of knowledge to enable them to judge of the productiveness of soil; to plant, propagate, bud, and prune the Orange tree. The parties to engage in the business are those who have sufficient wealth to enable them to pay for skilled labor and await returns; or active, energetic, industrious men, possessing a sufficiency of horticultural or agricultural knowledge to enable them to produce other crops, until the golden harvest is ready for market.

With regard to budded or unbudded trees, much difference of opinion exists. Some advise the planting of seedling trees, and others recommend budding on the wild orange stock. Some of the old groves, and many of the new ones, have been planted with unbudded trees raised from the seed of sweet oranges. Unfortunately, the orange sports from seed, and the fruit of an unbudded grove will vary in size, form, color and sweetness. To insure the best and most marketable fruits, we would urgently recommend the importance of planting budded trees—and trees budded from the best varieties in cultivation. The stock heretofore used has been the wild orange, peculiar to the State. The stocks are removed from the forests, cut off about four feet above the soil, and budded in June or July after transplanting. One thing has been overlooked in Florida, and that is, the importance of the lemon as a stock for the orange. The lemon is of more vigorous growth, and will succeed where the orange will fail—hence one of its advantages. Along the shores of the Mediterranean, the importance of the lemon as a stock is admitted, although it has been urged as an objection that it is short lived. The orange on the orange stock remaining vigorous and productive for three hundred years, on the lemon stock for about one hundred and fifty years. I have repeatedly found, in Florida, a rampant growing variety of the lemon producing very large, thick-skinned fruits, succeeding in poor soil where weeds struggled for existence. If I intended engaging in Orange culture, and was forced to raise my own stocks, I would raise seedlings of this variety of lemon, and bud them with choice varieties of the orange. By utilizing the stock, I am convinced that the planter would secure a crop of fruit much earlier than by planting orange trees raised from seed. When the wild orange stock is used, fruit is seldom produced before the fourth year, and when unworked seedlings are depended upon, the planter need not expect returns before the seventh year.

A difference of opinion exists regarding the best soil for Orange culture; some advocate a light, poor, sandy soil, and others a rich, heavy one. From our observations we are of the opinion that both are correct. On poor, sandy soil, the skin is

generally thin and the pulp contains an excess of saccharine matter; but on such a soil the trees are of slow growth and the yield limited. On rich and rather heavy soils the trees grow luxuriantly, mature early, and produce abundant crops of large, richly colored and marketable fruits. Some of the largest and finest oranges we ever inspected, were grown on the rich hammock lands in the neighborhood of Brooksville. The natural habitat of the wild orange tree is low, rich land, with permanent and potable water within from two to five feet of the surface.

But little attention has been paid to the preparation of the soil for Orange culture. To any one about to engage in the business, we would say cultivate your trees in a nursery for several years, and each year apply *quantum suf.* of manure; by such a proceeding, bearing trees can be produced at an earlier day. Instead of planting the trees where they are to remain permanently, we would thoroughly prepare the soil for their reception. If old and exhausted land, we would plough deep and sow green crops to be ploughed under, or pasture stock on the land. By a judicious selection from three to four green crops can be produced in one year. In the course of three or four years, poor land could be improved by this procedure, and Orange culture made a success. If new land, we would advise the trees to be grubbed and the land thoroughly cleared. If the new land is poor, we would recommend thorough culture, and the growth of green crops as a manurial substance. The poor, sandy lands of Florida are deficient in humus, and the growth and turning under of green crops would secure the needful elements. Those who have been accustomed to raise wheat and corn, will remark, "that this is paying dearly for the whistle." But an orange grove is planted but once in centuries; that the richer the soil, and the sooner returns are obtained; and that a bearing grove will yield from five to fifteen hundred dollars per acre annually—hence there is an inducement for thorough preparation of the soil.

Pruning the orange tree in Florida seems to be tabooed; and the trees are a dense mass of branches and leaves with the fruit confined to the perephery. If the trees were annually pruned, and the head kept open, a greater quantity, and a superior quality of fruit would be produced.

The prospector, when examining the State, inquires, "where can I obtain manure?" To the uninitiated I may remark that muck exists in immense quantities, lime is cheap, and in any of the lakes and rivers fish are in countless numbers awaiting the night line with its hundred or more hooks, or the seine with its trap-like embrace. Hence manure of a superior character can be made at a trifling expense. A superior quality of super-phosphate of lime is manufactured at Charleston and sold at \$28 per ton. Charles H. Edwards & Co., of Sarasota, are preparing an excellent article of fish guano, and supplying it at \$18 per ton. Sheep succeed in the State, and the settler could make them profitable. If shepherded and cared for, their increase would average 90 per cent. The wool is a marketable commodity, and if the animals were penned up at night, the manure produced would be of value. Fowls and cattle succeed, and with pasturage and feed the year round, their manure, associated with plenty of muck and fish, if applied to poor lands, would render them productive.

June Meeting of the Michigan State Pomological Society.

TO THE EDITOR OF THE HORTICULTURIST:—The June meeting of the Michigan State Pomological Society was held at Kalamazoo, on the 25th, 26th and 27th. Notwithstanding the extreme severity of the past winter, which seriously injured the trees of the more tender varieties, oftentimes even in sheltered localities, and also the severe drought recently prevailing in this State, the display of cherries and strawberries was exceedingly fine. The attendance was large, and especially so from the Lake Shore region.

Valuable papers were contributed by Prof. Beal, of the Michigan State Agricultural College, on the Agency of Insects in the Fertilization of Plants; by Prof. Cook, of the same institution, on Insects Injurious to the Strawberry; and by Prof. Kedzie, on the Importance of Timber Protection. Also others, on the Production of Seedling Fruits; the Elevating Influence of Horticulture; the Strawberries recommended by the Society, with modes of culture, etc., etc.

Reports were received from many sections of the State respecting the injuries of the past winter and the present prospect for a fruit crop. These reports were, in the main, more favorable than many persons had been led to anticipate.

Apples were reported as varying from a third to half a crop—in some cases more. Trees of Baldwin, Roxbury Russet, Swaar, and some other of the more tender varieties, were represented as badly injured, and in some cases killed outright; although the hardier varieties were generally represented to be sound.

Pears were reported as badly injured, especially those on dwarf stocks. Very little was stated respecting the comparative immunity of varieties. Sound trees are said to be carrying more than an average crop.

Sweet cherries were also said to be badly decimated, and it had been supposed that the fruit buds had been totally ruined; but the sound wood has produced a partial crop of fruit, though generally of smaller size than usual, from the effect of drought.

Duke cherry trees are more or less winter killed, and are showing a thin crop of fruit.

Morellos are generally uninjured, and are carrying a good crop of fruit. Peaches were reported as badly injured or totally ruined throughout the older and unsheltered portions of the State. In timbered or protected regions, as along the lake shore, many trees are killed or seriously injured, yet in many localities they are so thickly set with fruit that it is found necessary to reduce the crop by thinning.

Grapes, when left upon the trellis, are reported as sadly injured, although in favorable situations, and in all cases when covered, they have escaped, and the sound vines are represented to be showing an unusually fine crop of fruit.

Of the smaller fruits, strawberries seem not to have suffered from the winter, although sadly pinched by the drought. The great mass of the market berries are Wilson's, although a few Triomphe de Gands are offered, and occasionally others.

Black Caps are represented as entirely uninjured; and the same may also be said of the Philadelphia.

A committee of the Society, constituted six months since, reported at this meeting upon lists of fruits for general cultivation ; and, in submitting their report, remark that such report is a compromise, and not fully satisfactory to any one of them ; adding the suggestion that the time must soon come, if, indeed, it has not already arrived, when it will be found necessary to district the State and provide local lists.

The sessions were enlivened with vocal music, and also an original poem, by Mrs. Wheaton, of Kalamazoo ; and the meeting was, on all hands, conceded to be a thoroughly enjoyable as well as profitable occasion.

T. T. LYON.



Grape Phylloxera.

BY S. J. PARKER, M. D.

THIS is a term which, if the present opinions of many distinguished and useful men are sustained, must become familiar to every grape grower. There has long been noticed certain unaccounted-for years of the immaturity of the wood of the vine, want of ripening at the usual period of its fruit, and in the winter or early part of the next season after, the death of the old canes of the vine. This immaturing of fruit and buds, decay of leaves, we have too often ascribed to wet or dry, cold or hot fall weather, or some other apology of a season. The death of vines during the winter, and especially by the hot sunbeams of early spring, and the dryness and heat of later spring, we too often have ascribed to any cause except the injury done to the roots, and especially the rootlets of the vine, by an insect now known the world over as the *Phylloxera*. Perhaps it was certain French savans and German observers that first discovered this minute pest on their vines. But to Prof. Riley, the distinguished entomologist of Missouri, so far as I know, is due the first distinct public announcement, in a manner to attract attention in this country, that this insect here was also the cause of the injuries to vines usually credited to other causes.

Several others may have spoken of it, especially of our resident German friends. An insect was discovered, ten years ago, in winter, in a certain propagating house in the middle of New York, and the owner said, "it is the worst enemy I have ; I could propagate hundreds of thousands of vines, if I could get rid of it." Later he abandoned the "green eye propagation," because "the vines were stunted" by the insect. I have a vine of Eumelan that I paid him three dollars for, now — years old. It has not grown six inches above the ground. It has *Phylloxera*, or the *Pemphagus vitifolia*, which is the name for the same insect when it preys on the leaf. But as *Phylloxera vartatrix* has become more the general term for it, and expresses the idea of injury anywhere, to both leaf and root, it must be accepted as the final and adopted name.

If my ideas and observations are correct, one form of the *Phylloxera* is its appearance in midsummer, on the leaves of the vine, and usually by punctures on the top

of the leaf. These punctures are oftener open than closed. I have seen them in both forms. Where there grows a minute ball, or exerescence, and as it scientifically belongs to the same class of leaf growth as the nut "gall" and other "galls" or roundish growth of leaf or leaf stem, those in Europe call it a "gall." But it is the taste of Americans to use no cant, or set, or awkward terms, either in describing machinery, or anything else; and hence we shall not accept the term "gall," but speak of the prominences, enlargements, and, if you please, pustules or pits caused by the insect. My observation, now at least fifteen years, on this "gall," pustule, or prominence on the leaf is, that very often no minute insect can be found in it. At other times or years, a red mite occupies the cavity of these small enlargements, which are often two, six or eight, near each other, or are deerete or single, or confluent or many on the leaf, so that the badly infested leaf has pits as of small-pox pustules in the human subject. At other times those balls contain yellow insects, and even of other colors. The reason of this variety of colors I do not know, but it is clearly a fact. This injury to the leaf I believe does but little damage comparatively, usually, to the vine, and none or little to its fruit. But it is proof that it is on the vines, whenever seen.

The great damage is done to the root, the second form of its injury, which also in midsummer, and later, perhaps at other periods, it does by its feeding especially on the rootlets, where, also, it produces excrescences and other marks. But of this my own observation has not been accurate enough to fully describe it—a matter which has been now fully done by others. As it does its injury to the roots, the roots furnish diseased sap, and, as I have said, I believe it accounts for the want of ripening of the canes and fruit at the proper time in the fall. And often frost comes on the wood, leaves and fruit, yet but half matured. Hence the loads of half ripe grapes that deluge our markets of late years. Henee, too, the bearing wood for the next year enters the winter but poorly prepared for flowering and fruit bearing the next season. Next, in the winter, as seen abundantly in the winter of 1871-2, the vines in January to March crack open; and as the sap is in feeble supply, the buds of canes, though alive, have not sap enough to open, and they dry up and die as warm weather comes on. Mr. Lander, of the Agricultural Department, spoke to me of this fact several years ago; and lately, Western propagators from single eyes of cuttings have described cuttings growing from canes that failed to burst or open their buds in the portion left on the vines.

As the question now stands, it seems probable that much of the irregular ripening, much of the killing of buds and canes; perhaps all of the occasional loss of the upper portion of our American vines, and other unaccounted-for injuries, are to be charged to this insect, whose name as *Phylloxera*, or *Pemphagus vitifolia*, is scarcely yet known to the mass of vine growers. At any rate, it becomes us all to carefully observe, accurately note and describe its habits and our losses by it. I am favorable to all State and other entomologists, but do not consider it their duty to provide a remedy for every insect; as I believe, in all cases of a persistent insect, as the curculio, and, I fear, *Phylloxera*, nothing effectual can be done by any one, except on a scale too small to accomplish much.

An Address, by F. F. Mercer, before the Pennsylvania Fruit Growers' Society, Jan. 1873.

FIRST.—*What method of propagating Grapes produces the healthiest plants?*

I have myself propagated but in two ways, from single eyes under glass, and from two-eyed cuttings in the open air. I abandoned the single eye method after the second year, as I found that those from cuttings in the field were much the finest plants, and my customers, many of them ordering a second time, would prefer plants grown from cuttings. There were some varieties, however, that did better under glass, such as Diana, Adirondack, Iona, Rebecca, and many others, but that is the only place they ever did well, for when I came to fruit them—no, that ain't it—when they got old enough to bear, the grapes were not forthcoming, the principal cause of failure—mildew.

But all soils are not equally well adapted to growing vines out of doors. My soil is fine sandy loam, and grows good plants. The best vines I ever bought came from Vineland, and I never got a good vine from Rochester. I never want a cutting more than six inches long, and prefer them about five inches, as they root quicker than cuttings eight or ten inches long. I bury the upper eye just under the soil and tramp well on each side of the line.

SECOND QUESTION.—*Has Grape growing proved profitable?*

Of course I can only speak for myself, and others in my immediate neighborhood. In my own case I cannot do better than copy a few items from my sales book. In 1869, the average price was 13 cents per pound; in 1870, Sept. 1st, 400 lbs. Hartford to Scranton, at 20 cents; Sept. 8th, 300 lbs. Ives at 15 cents; Sept. 12th, 400 lbs. Concord to Wilksbarre at 12½ cents; none sold less than 12½ cents per lb. 1871, first Hartford 15 cents, to Scranton; Sept. 14th, 242 lbs. Concord to Williamsport at 12½ cents; Sept. 20th, 700 lbs. Concord to Plymouth at 12½ cents. The last shipment of Concord, 700 lbs. to Pittston at 10 cents. 1872, first Hartford 15 cts.; first 300 lbs. Concord at 12½ cents; all the rest at 10 cents, excepting 2,400 lbs. Concord at 5 cents. The crop was heavy in most vineyards last year, and sales inactive and low. A great many more vines are coming into bearing every year, and I think that grapes will bring less money next year than last.

So far the grape has proved profitable to me. The old vines of the Concord rot more or less every year—enough to spoil the bunches for shipping as table grapes. The 2,400 lbs. sold at 5 cents, were of that character. Had they not rotted, there would have been at least 3,400 lbs., and they would have brought 8 cents at least. I sold them to a distiller for brandy.

We have one advantage in Catawissa; our grapes do not ripen until the Jersey crop is on the wane, and the Lake grapes do not come in until ours are nearly over, and that enables us to get better prices. One of our largest grape growers in this part of the State is Mr. George B. Youngman, of Sunbury, who has four acres of Concord in bearing. I wrote him, asking him if grape growing had been profitable with him, and telling him why I wanted the information. He says:

"To the question, has grape growing proved profitable? I will answer, it has been profitable with me for the last three years. I received from 7 to 12 cents per lb. for my grapes; a fair average I think would be 8 cents per lb. But I received more

than any one else for Concord in Sunbury, because they were better than any in the market, so every one said who bought and tasted them. Had the question been—"What are the prospects of grape growing—*will* it be profitable?" I would have answered—I think it will not be profitable. There are too many going into it; besides, many farmers are growing a few vines, and are bringing grapes to market, and the prices are going down—down—down. If I can, after a year or two, average 5 cents per lb. for my grapes, I will be glad of it, and at that price I won't become rich. I apprehended this, and have prepared myself for wine making. During last summer I built a wine vault, arched of course, and well under ground. I reach it by a perpendicular descent of 19 feet. Being deep, the wine will keep well. It will hold from 10,000 to 15,000 gallons. I am now prepared to make wine.

"The question now arises: Can I sell it at prices that will pay? Is not the local option law that is now about going into effect in our State, a lion in the way? The information we have from California and the Lake region, on the wine question, is not encouraging—too much competition. Were my advice asked by one about going into the grape business, I would say, don't do it. I should like to have the proceedings of the convention about to assemble. Please let me hear from you on the grape question after the meeting. I had intended going to the convention, but am sorry I can't spare the time.

Repectfully yours,

"GEO. B. YOUNGMAN."

QUESTION: "*Has any Grape introduced since the Concord been generally reliable?*"

I think not, certainly not as far as my experience is concerned. I have tried a great many of the varieties that have been brought out since the Concord, and have never found any of them worth growing. A great many varieties are much superior to the Concord, and thousands and tens of thousands of the vines have been planted. But go into the markets of our cities during the grape season. How many crates of Adirondack, Allen's Hybrid, Diana, Diana Hamburg, Iona, Rebecca, Maxatawny, etc., etc., do you find? Not a great many, I think, but everywhere Concord, Concord! I have found nothing profitable in the way of table grapes except Hartford and Concord, just because every one else plants the Concord.

About the experiment in cultivation I spoke of, I will now explain. I think some of the older members present may recollect my suggestion, some seven or eight years ago, that I thought many of our native grapes would do better with less cultivation, even growing them in sod, citing instances of vines growing in city yards, bricked all over, so that the roots never see a particle of sunlight. I remember very well seeing one or two noses going up at the very thought of growing grapes in grass, but the following spring I put it in practice myself. I took the last two trellises in my vineyard, vines three years old, and sowed it thick with grass seed, and from that time to this, there has never been a pound of manure put on it. I mow it once—about the last of June or first of July—and let it rot on the ground, and now for the result. There are 68 vines in the two rows, and they averaged 1,500 pounds of grapes for the past four years. They are wine grapes, Clinton and Franklin. The Franklin is the best wine grape we can grow in this part of the State, that is, I think so. I had tried it in cultivated ground, and had seen others try it, but it made such an enormous growth of wood, and but little or no fruit, so I determined to try my theory of

grass. The sod soon checked that rampant growth of wood, and the crop of grapes is beautiful to behold, from the lowest vine to the top, one mass of fruit. The berry of the Franklin is larger than the Clinton; has about three per cent. more of saccharine matter, and makes a wine something like Norton's Virginia. At one end of my trellises is a Hartford vine, which has borne fair crops of fruit, and does not drop the fruit as much as in cultured ground.

The two past seasons I have cultivated the rest of my vineyard lightly in the spring. Sow with oats and harrow in. It prevents the ground from working after heavy rains, and saves a vast amount of labor. Of course I let the oats rot down, which makes a covering for the ground during the winter. I would mention, that the vine on which the grapes have rotted for the past three years, are not in the vineyard, but in my garden, and have always been kept scrupulously clean, never allowing the ghost of a weed to be seen therein.

LASTLY.—“*Why have so many Grapes failed?*”

I can throw but very little light on the subject. The mildewing of the foliage is one of the principal causes. But I am utterly in the dark as regards the rot. The foliage of the Hartford, Franklin, Clinton, Virginia Norton's, and Concord, is never affected by the mildew, and all, save the Concord, free from rot. The most perfect fruit is the Franklin. You might cut a ton of them without finding a faulty berry.

Flowers and Plants in Cemeteries.

IN our rural cemeteries we usually find too little taste displayed, or attention given to adornment. How often is it the case that cemeteries are entirely destitute of embellishment, except it be here and there some tree, evergreen or other! In some places, we have noticed, the unoccupied ground has been allowed to come in to white birches and other wild shrubs, as well as briars. In one cemetery, we have in mind, a portion of the ground has been allowed to come in to blackberry vines, trailing over the ground; and individuals occupying lots, which they took some interest in keeping in decent order, have been put to considerable expense of time and labor in rooting out and destroying these intruders; but where only one individual works, unless he can have the co-operation of others interested, as also that of the town authorities, whose duty it is to keep our cemeteries in order, the task is a heavy and constant one. Why is it that so many take so little interest in the places of burial of their dead? Let each answer for him or herself. Some of our cemeteries are laid out and kept in something like fair order, yet there is generally but too little taste in individual embellishment of the graves of friends, although we are free to allow that there is a growing taste for more adornment, individual and general, of our rural cemeteries; and all this is brought about by example, and from observation of the more embellished grounds of our cities and populous places. Now what shall be done or said, to induce our rural people to take greater interest in their cemeteries? We know of no better way than to agitate the subject through our agricultural and family papers, educate individual taste, or, if that is impracticable, appeal to individual pride, from which few will withstand long.

Plants, Shrubs, etc., for Cemeteries.—It is a difficult task to advise as to what

plants, etc., shall be planted in our rural cemeteries, so varied are the circumstances; yet one thing we must plead against, that is, planting large growing trees near or among the graves. If we must have them, let them be in some portion expressly devoted to them. Our views are decided in this respect, after having seen the effect on grave and tombstone where trees have stood to shade them. Stones are perishable, and where water drips from trees, together with the shade, the highest polish soon becomes dull, and in time the stone crumbles; and again, when the tree gets large, the branches often decay, fall, and frequent damage is done to stone, or other adornments. We appreciate the beauty and majesty of trees as highly as others, still we think that there are places where they may become out of place. Small shrubs and low growing plants are the most appropriate for grave decorations. As a general thing the soil is too poor, and unless some improvement is made by adding fertilizers or better soil, the range of plants is quite restricted, which will succeed.

For shrubs we should prefer Deutzia gracilis, Pyrus Japonica, Syringas, Calyeanthus or sweet scented Spireas, Weigela, Roses, etc. Flowering plants: The Day Lily, which will grow on soil not very rich, and endure our winters, generally, without protection; the Pansy, White Iris, and Paeonies, for hardy perennials. In less hardy we would select from our house or pot plants. Ivies, Flowering Maple, Geranium, rose scented; Verbena, white; Coleus, etc.

We dislike a plant inclined to spread rapidly, or to crowd out other plants, for grave decoration. Of Roses we should select only the white flowered, for hardy, Tea-scented for summer decoration. Plants and shrubs with white flowers would suit our taste, still other colors are not to be entirely excluded where several varieties are planted.—*N. E. Homestead.*

Prospects for Fruit near St. Joseph, Michigan.

WITH the exception of peaches and blackberries, fruit in this region has not been materially injured by the winter. Young and vigorous peach trees are showing considerable bloom, and in a few instances it is reported there is enough for a full crop. Blackberries will be very scarce. The Clark and Philadelphia raspberries are looking finely. Some varieties of the sweet cherry are injured in the bud, but not enough, perhaps, to lessen the crop materially. Grapes of most varieties are putting forth vigorously. Apple blossoms are plenty, and pear trees are as full of promise as the man who seldom pays.

Yellows in Peach Trees.

I notice a New Jersey fruit grower is *very sure* the yellows is caused by poor soil, and that good soil and good culture will prevent it. This doctrine will certainly do no harm, but the facts do not seem to support it. There are instances where only one limb has shown the symptoms the first year, the rest of the tree producing fruit perfectly free from disease. It would be difficult to explain how poor soil could affect a small portion of the tree only. All speculations in regard to the causes of the maladies to which fruit trees are subject, seem to be, thus far, fruitless. Perhaps it would be just as well to conclude that they are the result of the *little mistake* of the wife of the superintendent of the first fruit garden, and let the matter drop.

Plants in Sleeping-Rooms. Are they Unhealthy?

THIS long agitated question is now definitely set at rest by the experiments of Prof. R. C. Kedsie, of the Michigan Agricultural College, and are thus related in a letter of his to Governor Holt :

Not to leave this matter in the condition of mere conjecture, I have gathered and analyzed specimens of air from a room where the influence of growing plants would be exhibited in a greatly exaggerated form. Thus, instead of taking the air from a room containing a few plants, I gathered it from the college greenhouse, where more than 6,000 plants are growing. I gathered the air before sunrise on the mornings of April 16th and 17th; the room had been closed for more than twelve hours, and if the plants exhaled carbonic acid to an injurious extent, the analysis of air from such a room would certainly disclose this fact. The three specimens of air gathered on the morning of April 16th from different parts of the room, gave 4.11, 4.00 parts of carbonic acid in 10,000 of air, or an average of 4.03 in 10,000. The two specimens of air gathered April 17th, gave 3.80 and 3.80 parts of carbonic acid in 10,000, or an average on the whole of 3.94 parts of carbonic acid in 10,000 of air, while the out-door air contains 4 parts in 10,000. It will thus be seen that the air in the greenhouse was better than "pure country air." This deficiency of carbonic acid was doubtless due to the absorption of carbonic acid and consequent accumulation of oxygen during daylight, since the windows of the greenhouse were closed day and night on account of the cool weather.

To ascertain whether the air of the greenhouse had more carbonic acid by night than by day, I gathered two specimens of air in different parts of the house, at 2 o'clock P. M., April 17th. These gave 1.40 and 1.38 parts of carbonic acid in 10,000, or an average of 1.39 parts, showing that the night air contained more carbonic acid than did the air of day.

Now, if a room in which were more than 6,000 plants, while containing more carbonic acid by night than by day, contains less carbonic acid than any sleeping-room on the continent, we may safely conclude that one or two dozen plants in a room will not exhale enough carbonic acid by night to injure the sleepers.

It is so easy to be deceived by a name! I lately saw an article showing the beneficial and curative influence of flowers in the sick room. Instances were related where persons were cured by the sight and smell of flowers, and without question their influence is good. Yet flowers exhale this same carbonic acid by day and by night! The flowers, by their agreeable odor and delicate perfume, impart an air of cheerfulness to the sick chamber which will assist in the recovery from lingering disease, notwithstanding the small amount of carbonic acid which they constantly exhale.

The presence or absence of carbonic acid is not the only question in regard to the healthfulness of plants in a room. The state of moisture in the air of the room may become an important question, especially in the case of persons afflicted with rheumatic or pulmonary complaints. But I will not take up that subject.

Care of Shrubs in Lawn and Door-yard.

ROSES and shrubs are now much grown in suitably arranged masses or natural groups, and that is the best way of keeping up a varied and varying show of all their beauties, with least trouble.

When they are grown as isolated plants in front yards, it is necessary to make them "hold their heads up," and look trim and tidy. Every day we see examples of such bushes tied up in compact bunches, with a stake to secure greater uprightness; but towards April it is common to see stake and all dangling helplessly over. Then they are straightened by resetting the stake, and by cropping the disheveled tops by barber-ous pruning shears or knife.

This treatment is senseless. It directly defeats the main object, which we suppose to be the securing of a plant of neat figure, robed in luxuriant leaves, and brightened with well-expanded flowers. For it is obvious that not one of these crowded shoots can open its leaves to the light, and as they were similarly suffocated last summer, they have nothing laid up—no means or substance from which to produce good flowers this year, even if there were room to display them. Next summer they will, of course, be barren too, if the leaves are given "no room to turn."

But the bush will do *something*, so long as it has roots safe and sound, and as it can do nothing else well, it will go back to the primitive course of throwing up fresh sprouts from the ground, thus adding to and aggravating the crowded condition above.

The right treatment in such a case is to use a strong, narrow knife, or saw, or sharp pointed pruning shears, such as French gardeners use, or a suitable chisel and mallet, and cut out all the old exhausted shoots, and all the young ones that are weak or unripe, close at the surface wherever possible, or beneath it, for neatness sake, leaving only those which have been first selected as the best and the best placed. Separate these by tying or spreading, using a light hoop if necessary, to secure a well-balanced and evenly distributed figure, with full room around each shoot for its flowering branchlets and leaves, and full access of light and free air throughout. If a stake seems needful, it will not look amiss, provided it is set erect and centrally, even although it may be thick and tall. In that position it may be even taller than the shoots. The shoots left to bloom should not be shortened further than to take off ill-turned, unsymmetrical branchlets, or slender ones incapable of bloom.

If this care is supplemented by a trifling attention, in May or June, to pinch out the sprouts that will appear numerously then, leaving only the suitably placed few that are wanted to fill vacancies, or to renew good blooming canes, according to the nature of the plant, the fullest rewards of successful training will be attained. Some plants make a rank growth from the tops in August or September, and in their case a pinching of the *ends* of wild or wanton shoots is advisable.

Climbing roses, raspberries, currants, gooseberries, etc., class under the above rule of treatment.

When shrubs are grouped in masses they are not tied up in any formal figure. Pendant branchlets or low growing sorts placed in front of erect ones hide the stems, and present to the sight only leaves and flowers, as in natural boscage.—*Country Gentleman.*

English Window Gardens.

A CAPITAL idea is prevalent in England, manifested by the encouragement of growing flowers for window gardens, and the award of prizes at annual exhibitions. We have nothing of this character yet among the American flower lovers, although the taste for window gardening has grown so fast here as already to amount to an enthusiasm. An English paper gives a happy account of an annual exhibition of flowers and plants grown by the working classes of Edinburgh, in windows, back greens, areas, and city garden plots, held in the Grassmarket Corn Exchange, Edinburgh. The products sent in for competition presented such a marked improvement and increase in numbers over those of the two preceding years as should induce not only the promoters of this philanthropic movement to go on perseveringly in extending a taste for flowers and flower culture among the artisans of the Scottish capital and their children, but to show an example well worthy of imitation in other towns by those who have the means of fostering a love for the instructive, humanizing and elevating pastime of flower growing among their less opulent neighbors.

Before distributing the numerous awards, the chairman, Dr. Balfour, professor of botany, said he had to congratulate the meeting on this most successful show. The committee had examined the articles sent in for competition, and they had unanimously declared it to be one of the best shows they had seen. This year they had about one hundred more competitors than last. The improvements in the keeping of window gardens and areas was quite remarkable. He was delighted to see the working classes taking so much interest in plants. It was natural to man to do so. His existence as a worker began in the garden; whether in health or in sickness, flowers and plants afforded him a solace and delight. He believed the culture of flowers had a most humanizing influence, and even in the most crowded parts of the city they would spring up; and where they were carefully tended, they could not fail to have an excellent effect on the temper, conduct and life of those who bestowed on them their care. He hailed this as a most auspicious occasion, and he was delighted to see that the whole collection was remarkably good. Some of the plants here, even those cultivated by juveniles, were equal to what they would find in the Botanic Garden. The collection of John Heseltine, embracing 200 plants, well grown, delicate in form, and rich in color, was really wonderful. The window frames were admirable, great taste being shown in the contrast of color and in the training of the plants. The committee appointed to visit the areas reported that they were this year greatly improved, all owing to this movement.

Bees.

WE ask those who keep bees to report the extent of the Kentucky Desertion Disease. Bees died last winter largely of dysenteria, leaving the putrid smell and marks of the disease. But hives dead of Desertion Disease smell sweetly with the finest perfume, have large quantities of honey and clean combs. I am almost prepared to show that this is a decay of the internal muscles of the bee, but not yet.

S. J. PARKER, M. D.

The title page features a highly decorative, symmetrical border with floral and scrollwork patterns. In the center, the word "THE" is enclosed in an oval above the main title "WESTERN HORTICULTURIST". Below the main title, a banner contains the names "MARK MILLER" and "H.W. THOMAS-DES." on the left, "EDITOR" in the center, and "DES MOINES, IOWA" and "E. SEARS-SC." on the right.

THE WESTERN HORTICULTURIST

MARK MILLER EDITOR H.W. THOMAS-DES.
E. SEARS-SC. DES MOINES, IOWA

Transactions Illinois State Horticultural Society.

WE have in hand a copy of the doings of the Illinois State Horticultural Society for 1872. It is the Seventeenth Annual Report of the Society, forming a handsome volume well filled with the usual reports from the standing committees, discussions, and liberally spiced with well written papers upon various topics. The report upon utilizing fruits is of general interest, for who does not at the present day, use fruit, or its products in some form or other, even to hard cider. The work upon the report was divided among the committee. Mr. Periam of the committee spoke upon the preservation of orchard fruits in their natural state, and of drying and canning. In treating this division of the subject Mr. P. said :

All that is necessary in order to keep fruits perfectly, in fresh or natural state, is to place them in a dry, pure atmosphere, at a temperature of thirty-five to thirty-eight degrees. This has been accomplished by the plan of Prof. Nyee, and also in Schooley's preservatory, the essential features differing in no great degree. The plan adopted by Mr. Nyee was to keep the temperature of the room at thirty-four degrees, and the atmosphere dry by means of the refuse of salt works, chloride of calcium, commonly called "bitterns." It is thus stated by Prof. Nyee:

"In a room or any confined vessel when filled with fruit in the gradual process of ripening, carbonic acid and water are constantly being generated. Six pounds of carbon and one of hydrogen will take up all the oxygen contained in one hundred and twenty pounds of air. The oxygen, especially if the fruit be ripe and the room warm, will usually be consumed in forty-eight hours. The atmosphere is then made up of the nitrogen of the air, and carbonic acid. The former is destitute of all active properties, good or bad. The latter is not found to have any action on fruit immersed therein. Hydrogen and carbon then cease to be evolved from the fruit, as there is no agent to unite with them, in the same way that they cease to be evolved from a burning candle when air is removed. Decomposition ceases in both cases, from the same cause."

It is simply the application of a principle laid down by Liebig who says :

"Decay is much retarded by moisture, and by the substance being surrounded with an atmosphere of carbonic acid, which prevents the air from coming in contact with decaying matter."

From this it would appear that the more perfectly the fruit is ripened, the better it will keep, care being taken that it be not overripe; the process of after ripening being a purely chemical process, the starch being gradually converted into sugar,

for however much starch a green fruit may contain, it is gradually changed during the process of ripening, until not a trace of starch may be left; for again Liebig says: "The more starch the green fruit contains, the more sugar will be evolved during the process of ripening."

The same principle was used in the plan not long since promulgated, the invention being to place the fruit in water-tight packages, and fill the interspaces with carbonic acid gas, but as a matter of course, the plan did not work except in theory.

The fruit houses of Mr. Nyce were two-story buildings, the upper chamber containing ice, the sides and floor being double, three feet thick and filled in with some nonconductor, so that the fruit room should be practically air-tight. The fruit was placed on shelves or racks, to the depth of two or three feet. I have had tomatoes preserved for three months in the house in Chicago, which came out in perfect condition. The Chicago house, however, did not pay, and it was soon, I believe, abandoned.

The elements, therefore, of a complete preserving atmosphere are a uniform temperature, just above the freezing point, dryness, purity, and the exclusion as far as possible of the great agent of the decomposition—the oxygen of the atmosphere. Whoever can secure these conditions most cheaply will best succeed in keeping apples, pears, and grapes, and with plenty of these fruits out of their natural season, there is a fortune to whomsoever succeeds in its accomplishment.

I think the best place for keeping fruits in their natural state is in fruit-houses with double walls, secure at the same time from frost and the constant changes of the atmosphere; for however cheap dried or canned fruits are in the market, first-class natural fruits will always command a remunerative price. A curious fact in connection with seasons of extreme plenty like the one just passed, is, that being plenty, so much fruit is wasted that a scarcity almost always follows.

Where the soil is perfectly dry to a sufficient depth, or capable of perfect drainage, a fruit-house may be readily built under a barn or carriage-house, provided no stock is kept in the barn. The walls should be seven feet high, and if three sides are under the ground, the other side may be exposed to the weather if the ventilators and windows are double.

To prevent frost entering through the upper floor, it will only be necessary to have the beams one foot deep, the floor to be made of common two-inch plank, the joists or beams to be covered with matched boards for the ceiling; if the inter-spaces are filled with sawdust, or some material of like nature, frost will not enter. A trap-door should be provided for taking out fruit, or entering the cellar in cold weather; and a chimney also, for ventilation in extreme weather. If the whole cellar is not wanted for fruit, it can be partitioned off and a part used for storing vegetables. If the fruit in a cellar of this description be kept in tight packages, the temperature may run down to twenty-eight degrees for several days together, next the walls, without injury to the fruit, provided the packages are tight; and as an index to the temperature, a sufficient number of thermometers should be kept, at top and bottom, to indicate the degree of cold, so that when the frost once gets in the room, means may be taken to obviate it.

One of the principal reasons of failure in keeping fruit is that care is not taken

to keep it uniformly cool from the time of picking, and as near the freezing point as possible. This may be measurably attained by admitting the air at night, and closing it in the day-time until hard weather comes on. It is the true secret of greatest success.

Before leaving this branch of the subject, I would say that all plans for the preservation of fruits in their natural state aim at keeping them just above freezing point; as Nyce's, Schooley's, etc., are founded upon principles only differing in the details. One other plan that may receive a passing notice is Smith's method of driving out the atmospheric air from the packages containing the fruit, by means of the introduction of carbonic acid and nitrogen through a tube; this is effected by first passing a current of common air through a vessel of burning charcoal; and, although the plan is feasible, it has not resulted in profit.

We now come to preservation of fruits by drying. This plan has been practiced from remote times by simple exposure to the air; but the fruit becomes so black from oxygenation and dust, that its market value is slight. In order to be saleable it must be dried by the application of heat. This is performed in a variety of ways by the simple radiation of heat, and by currents of hot air forced either up through the prepared fruit, or down from above. The last is, we believe, the Ruttan system, and is used principally for drying grain.

Mr. Dunlap, a member of the committee, spoke of the liquid products of fruits, cider and cider-vinegar. He claimed to know how to make cider and cider-vinegar, and what he should say upon the subject had been gathered from his own experience and practice.

When your apples begin to drop from the tree, then is the time to begin to gather them. You assort the perfect specimens for market, and the remainder, which is sometimes the half of the crop, are to be made into cider or cider-vinegar. The best cider is made from sound winter fruit. Some varieties of apples often ripen their fruit prematurely, and you must be prepared to utilize the product by putting the same into cider or vinegar. Ordinarily one half of the summer apples must go into cider-vinegar, which will, under proper treatment, be ready for the market a year after.

I was in an orchard this summer, where there were not less than seven hundred bushels of apples that were allowed to drop from the trees, because the owner said it would not pay to ship them, and these were fine, beautiful red-cheeked apples as any could wish, and would have made from two thousand five hundred to two thousand eight hundred gallons of the best cider, that could have been sold for twenty-five cents per gallon.

The orchardist must be prepared to avail himself of every advantage in his situation. He must be independent of the apple market. I say to my customers, when you can pay me fifty cents per bushel for my apples you can have them. When the price falls below that I press them. I have cider made on the thirteenth day of August, that is sweet and good. I know that if I can't make the apples pay, I can make the cider pay, and the refuse, not fit for market at any time, is put into vinegar.

Some say rotten apples won't make good vinegar. This is a mistake. The Shaker vinegar, so much sought after and praised, is made of rotten apples, exposed to the

summer sun, and summer rains. Cider made in this way has sold for seventy-five cents and a dollar per gallon. Rotten apples make good vinegar, but to make good cider we use sound apples.

I am told that some make vinegar and can't sell it, and why can't they sell it? Because they do not have a clear, good article. Instead of racking the vinegar off, before stirring the barrel from its place, they perhaps roll it into the wagon, and stir it all up, and then it is impossible to settle it, and the grocery man will not have it.

There is another thing. I like to have my cider-vinegar high colored, and for this purpose, I let it stand in the vat twelve hours. We can ordinarily get about four gallons of juice out of a bushel of apples, in the method we adopt. We press out about three gallons of cider from the bushel, and in making vinegar we re-press this pomace, and get another gallon, so that from a hundred bushels of apples we get four hundred gallons of juice.

It is necessary to put into the grocers' hands *strong* vinegar, because, among other reasons, the grocer finds it very convenient sometimes, to put in four or five gallons of water. But if a customer comes and says, "Here, I want vinegar for pickles," the honest (?) grocer will be careful and not give him the watered vinegar.

To make good cider and vinegar there is needed care, skill, experience, and—if done on a large scale—capital. So that it may be questioned whether the man with a small orchard should attempt to be both producer and manufacturer. Might it not be better for him to sell to the manufacturer? It is not always that the small farmer can afford to lie out of his money, even if he had the tact and business ability to carry on a manufacturing establishment.

Another thing: to sell a manufactured article requires a previously earned reputation. A man who is not known in the market, might not be able to sell to advantage, but when a man has worked up a trade, and it is known that he makes a good article, he has no trouble in selling. There are gentlemen in this house who have thousands upon thousands of gallons of cider; you do not hear much about it, they have their customers, they come and take it and pay all that the man's cider is worth.

There was a time when it was difficult to get the grocery men to take our cider and pay for it. They could buy sulphuric acid cheaper. But when the people came to know the difference between this poisoned stuff and pure cider-vinegar, they were not so slow to choose the latter, and pay what it was worth; and when grocery men refused to buy my cider-vinegar, I sold direct to their customers until they were finally glad to "try a few barrels," and they have been trying my cider-vinegar ever since.

ONE OF THE LESSONS.—In commenting upon the effects of the past winter, Geo. J. Kellogg, Janesville, Wis., writes us: "One of the lessons the past winter will teach us, is to thoroughly mulch in September all young stock in nursery, vineyard, and garden, to prevent root killing by the effects of dry fall and hard winters. Once in seven years we have one of these extremely hard winters, and occasionally a dry fall between. The extent of injury to roots of pears, apples, grape vines and small fruits, is far greater than the injury to the tops, and greater than at present believed. Experience is a hard teacher, but let us heed and learn to be wise."

Which are the Best Wine and Market Grapes for the South?

A QUESTION of this kind was brought under discussion a few days ago, by a particular friend of ours, and one who ought to have known better, insisting that the inevitable Scuppernong is the best and most reliable as well as the most profitable of all grapes for the South. To this sweeping assertion, fashionable as it is getting to be, we could by no means yield an unqualified indorsement, and hence arose the discussion.

Although I have been for many years a practical grape grower, have watched the progress of this branch of industry in the South with critical interest, and have read about everything that has been published upon the subject, I have never yet seen any proofs whatever that the assumptions of my enthusiastic friend are founded upon fact in any particular. Admitting that the Scuppernong is hardy, reliable in its crops, and, when properly handled, a good wine grape, it does not follow that it is either the most profitable or the best for this purpose. There is at present but little demand for native wines in the South—our population is too *foreign* in its character, the German, French, Italian and Spanish element is too prominent in our lower and middle classes, while those who have been accustomed to "Heidsick" will hardly tolerate the musky twang that gives to nearly all our native wines their distinctive character. We must, as a stepping stone from the use of foreign wines, have something a little less American—something that, while not exactly foreign in all its elements, shall yet so nearly simulate the popular foreign brands as to deceive the masses, and not wholly repel the connoisseur wine drinker. Taking this view of the case, we cannot rank the Scuppernong as either the best or second best American wine grapes.

As for the *fruit* in a market point of view, I am disposed to give it even a lower grade than for wine. It is a poor eating grape until perfectly ripe, and then it is a poor shipping grape, as the skin bursts very easily at the stem and thus engenders fermentation and a shop-worn appearance throughout the whole. Its quality is never first rate in the estimation of most grape eaters, and it enters the market in a shape that is by no means popularly prepossessing—singly like plums and cranberries. It lacks the handsome bunch, the brilliant color and the delicate bloom that are so much admired in a grape, and which add so much to their commercial value. What have we that is better in all respects? Let us see.

The old reliable Concord is as hardy, productive and well-flavored, besides being much handsomer and coming into bearing much earlier. Let us take that for both wine and market. The wine from the Concord is less objectionably foxy to the cultivated taste, the yield is equally as great, and, under proper manipulation, is capable of assuming various grades and characters to suit the peculiar demands of the market. Except for its superabundance, it would be the best selling grape in our markets. Perhaps not inferior to the Concord, comes the Ives Seedling, one of the most reliable and productive in the whole list of grapes. The wine from it is most excellent and quite free from foxiness, and the fruit ships well and sells at the very highest prices. Last season, in spite of the enormous grape crop in this section, we

sold Ives at the rate of three hundred dollars per acre, and Concords at two hundred and forty!

But to close this brief grape talk, I will merely add that there is nothing else yet found that equals, for a rich, delicious American wine, the old Delaware—for a wine that the most exacting of wine tastes could find no fault with. But it is in the sale of fruit after all that the fruit grower will find his greatest profit—and for this nothing will excel the Concord and Ives.—*James Parker, in Rural Alabamian.*

The Peach: Curious facts in its History.

A CORRESPONDENT of the Maryland *Farmer*, after speaking of the magnitude of the peach interests of Maryland and Delaware, their advantages for its culture and the superior excellence of the fruit grown in those States, goes on to relate some interesting facts in connection with the history of this favorite fruit:

" It is a curious fact in the history of the Peach, that whilst it is a native of Persia and China, and was brought first to Italy in the time of the Emperor Claudius, and was considerably cultivated in Britain as early as 1550, and was introduced to this country by the early settlers nearly two hundred years ago; yet it is to a skillful and intelligent orchardist of England of the present day, with her unpropitious clime, that the American cultivator is indebted for the production of more valuable new varieties than he has received from any other source. Mr. Thomas Rivers, of Sawbridgeworth, Herts, England, has six acres of land under glass, devoted to the cultivation of Grapes, Plums, Apricots, Nectarines, and a very large proportion to the cultivation of Peaches. These fruits are cultivated for the London markets, and are produced by him in great perfection, and command almost fabulous prices. Mr. Rivers, having his whole orchards of these fruits under glass, can control his operations in the production of new varieties without disturbance from storms or insects; the blossoms on every tree being entirely subject to his management, he can work understandingly, and make hybridous varieties, at his pleasure, without risk of extraneous influence. The few new varieties produced in this country are the result of accident, the pollen being carried either by storm or insects from one variety to another, and the seed of the Peach from this bloom thus impregnated, has by chance, produced a tree. This rarely occurs, and when it does, the fruit is probably like something that we have already, or not as good as the original, without any change in the time of ripening.

" Mr. Rivers has been engaged in this business nearly twenty years, and has produced a number of new varieties. The Salway, a very superior late Peach, now generally cultivated, and very highly esteemed by growers and packers of fruit, was produced by him, besides several other varieties of superior excellence of quality. But the peach-growers of this country are more interested in, and will be more particularly indebted to him, for his success in producing an early variety that is intrinsically good, than for one however good, that ripens in midseason.

" In the Beatrice we have the result of his hybridizing his very superior Early Silver Peach, with the new White Nectarine, and it is all that the grower can desire

in an early Peach, being, though rather small, of beautiful color, agreeable flavor, and a sound, healthy bearer, and possesses remarkable keeping qualities, ripening, whether with Mr. Rivers, under glass, or in this country, where it has been cultivated, fully two weeks earlier than Hale's Early, which has been hitherto regarded as the earliest Peach. He has two other varieties that are second only to the Beatrice, the Early Louise and Early Rivers, both of fine quality, and in ripening follow the Beatrice in the order in which they are named; and both are earlier than Troth's Early, which is usually cultivated as the best early variety. These new varieties of Mr. Rivers' have been imported by some of our enterprising peach-growers, and will furnish the lovers of this delicious fruit an opportunity to gratify their taste much earlier in the season than they could have done but for the skill and enterprise of this intelligent orchardist of England."

The Fruit Prospect in Western Iowa.

ED. WESTERN HORTICULTURIST: For some cause, to me unknown, nearly all the Raspberries in this section of country are killed to the ground. On old plants the canes of Doolittle, Davison's Thornless, Miami, Seneca, Mammoth Cluster and Philadelphia are almost invariably killed, while on younger stocks only about half the canes are killed.

The old Yellow Cane or Yellow Cap, which is usually a little tender, has stood the winter best of all. Can you give me a reason for this? Concord grapes are also badly winter killed, while the Delaware is all right. Apples, pears, cherries and plums are literally loaded with bloom, and if we escape frost, we shall have a good crop of fruit. Currants, gooseberries, strawberries, etc., are also looking fine.

Crescent City, Iowa.

H. A. TERRY.

REMARKS.—We can give no satisfactory explanation to the question, unless it may be, in that the yearling plants complete their growth earlier in the fall, ripen up more perfectly, and hence go into winter with more vigor than do the older plants. Our yearling plants of the Philadelphia have always come out sounder in the spring than the older ones. The tips of both suffer some.

FRUIT IN SOUTHERN VIRGINIA.—A writer says: "Peaches grow almost spontaneously, and ripen from June till October. Pears grow and yield abundantly. All kinds of grapes which have been tried, thrive, but few are cultivated. Said a neighbor: "What is the use, when, with my little hand cidermill and a negro to help, I can go into the woods and in half a day make ten gallons of as good wine as ever was drank?" Apples do well; plums and cherries do better than ever known elsewhere. Wild strawberries, raspberries, dewberries, and blackberries abound, and prunes, pomegranates, quinces, and figs can be raised, and are, to some extent, in gardens."

Of Inoculating or Grafting.

ED. WESTERN HORTICULTURIST: Although we are wont to believe that modern practices are, as a general thing, preferable to those of ancient times, and, as a consequence, discard the old, it is sometimes well to refer to the doings and sayings of the forefathers for the purpose of making a comparison between modes of procedure, being thereby the better prepared to judge of the superiority of one over the other; for this purpose, I present a very short article, upon the above subject, from a book published over one hundred years ago:

“Grafting is an artificial Transposing or Transplanting of a Twig or Scion, a Bud or Leaf taken from the Tree, or of some other Kind, and placed, or put to, or into, that of another, called *Grafting in the Cleft*.

“The best Time for gathering Grafts is in the Middle of February. Observe that the Scion is to be cut below the Knot.

“*Grafting in the Cleft*. First cut or saw off the Top of the Stock to a curious Smoothness; then cut two Gashes with a sharp Knife; then, with small Wedges, sharpened according to the Bigness of the Graft, being thrust in, raise the bark of the Stock, and put in the Graft, exactly shaped as the Wedge; then close it hard with your Hand, and bind it about with Clay and Horse-dung mixed. In this Manner may any Fruits be grafted, whether Apples, Pears, Plums, Cherries, etc. The Apple is commonly grafted on Crab-Tree Stocks.”

Notwithstanding the antiquity of the above, in its directions, it is sufficiently explicit; and there is but little doubt but that, following out the same, with care, would result in equal success with any of the methods produced at the present day.

Columbia, Conn.

WILLIAM H. YEOMANS.

NOTES FROM THE COLLEGE FARM.—It appears that the Ida strawberry so highly commended from the College Farm, succumbed to the effects of the past winter. May 30th, Professor Matthews, of our State Agricultural College, writes us: “I find the Ida, which before stood it better than any other kind, dying out day after day for want of any life in the roots, and upon a careful examination I have come to the conclusion that there is not a plant of any kind of this fruit which would grow if removed. One in twenty may survive if left undisturbed.”

Prof. M. also remarks upon grape vines: “Out of about 1,000 grape vines in our vineyard, from three to four years old, not over 100 are alive, by reason of root killing. There is not, except of one kind, of which I have only two plants, a live root in the vineyard, and not one in about 2,500 young plants, mostly two years old. Of the two plants I speak of, nothing can be sounder than their roots. Here is a hint. Can not such a hardy kind be grafted at the ground, and have a vineyard which will bid defiance to this root killing, for my tops being covered with earth come out every spring as sound as I ever saw vines in my life.”

FRUIT GROWERS in the Grand Traverse, Mich., region, are rejoicing at the flattering prospects of an exceedingly bountiful crop.



Editorial Notes.

Rhododendron Show at Boston.

The Rhododendron show on Boston Common was a sight never to be forgotten—the finest in colors and display of choice varieties this country has ever beheld. It was with considerable difficulty the bare privilege was secured from the common council, to exhibit upon the Common; and next, it was believed to be almost impossible to transport and successfully flower so many plants as would be needed to produce the desired effect. Thanks, however, to the untiring energy of Mr. H. H. Hunnewell, Charles S. Sargent and E. S. Rand, jr., every difficulty was surmounted, and for the entire month of June the denizens of that city saw a collection of Azaleas and Rhododendrons of rare value and great beauty. The plants were mainly the property of Mr. Hunnewell, who appropriated from his private purse the sum of ten thousand dollars to defray the expenses of the exhibition. Although a nominal price was charged the public for admission, yet it did not altogether pay the expense.

Two large tents were erected, one about 60 by 100 feet, the other 100 by 300 feet, and the plants transplanted from their native home and conservatories of Mr. Hunnewell and Mr. Sargent, and placed in the natural soil of the Common. Within the tents were laid out, first, an avenue of 100 feet in length, bordered with Palms and rare Ferns; this led to the Rhododendron beds and walks. In the center of the large tent were three raised beds; the first, 15 by 30 feet; the second, 50 by 80 feet; the third, 15 feet in diameter. Walks also surrounded all the beds, which were also lined with specimen plants. Imagine all this space and beds filled solidly with masses of Rhododendrons in full bloom, bearing flowers of most royal size, and delicate as well as glowing and brilliant colors, and it would seem to be but a vision of the garden of Paradise.

We made careful notes of the best specimens, and their names, and they are here-with annexed. We only premise this statement by saying, that most of them are fit for in-door greenhouse culture only, many being but just imported from the Knapp Hill nursery of Anthony Waterer, Woking, England. Those, however, bearing a double star (**) are considered by Mr. Rand perfectly hardy for outdoor culture.

Scipio—Trained in tree form, five feet high; color, deep pink on edge; center, light pink.

Concession—Trained in bush form; petals, pink edge; white center.

** *Everestianum*—Purple edge; light pink center; very profuse bloomer; the hardest variety we have.

Brayanum—Tree form; deep pink petals.

Alarm—Bush form; scarlet and white stripes.

Purity—Bush form; profuse, white.

** *Album elegans*—Very large bush; white, slightly tinged with blush.

Mrs Halford—Bush, three feet; immensely prolific; bright pink flowers; trusses very large, very tender.

Charles Dickens—Deep pink; very brilliant.

Sir Charles Napier—Large bushy form; pink and white.

Delicatissimum—White, with slight blush.

Mrs. John Waterer—Petals, deep pink at the edge, and shading lighter to the center.

Azneum—Petals, purple edge; delicately shaded inward.

There were exhibited quite a number of large plants of *Azalea*—excellent specimens—trained in tree or pyramid form, mostly of scarlet color.

Among the fine specimens of other plants contributed to the exhibition, the following were noteworthy:

Cocos coronata—Fifteen feet high; by H. H. Hunnewell.

Latania Borbonica—Two very fine plants; by S. R. Payson.

Dicksonia antartica—By William Gray, jr.

Phenix dactylifera—By S. R. Payson.

Chamaerops excelsa—Eight feet; by H. H. Hunnewell.

Arancaria excelsa—By I. Sargent, Esq.

Areca lutescens—By H. H. Hunnewell.

Seaforthia elegans—Twenty feet high; by S. R. Payson.

Seaforthia elegans—Fifteen feet high; by H. H. Hunnewell.

Aralia pulchra; *Geonoma pumila*; *Cyathea dealbata*; *Pritchardia Gandichaudii*—Rare and fine specimens.

The Martha Grape.

The demand for white grapes has raised the question whether the *Martha* is in all respects satisfactory, and whether it has any serious faults. This could not heretofore be settled, owing to the limited practical experience of growers. Yet its faults are beginning to develop—perhaps they may be only local, and not general. In answer to an inquiry addressed by us, a few weeks since, to E. R. Spaulding, Cedar Creek, N. J., respecting the success of the *Martha* with him, he writes:

"The *Martha* is a strong, hardy-growing grape; fruits freely; carries its foliage through in almost the same conditions of health as the *Concord*. It has one serious fault (I have fruited it but two years): the fruit rots badly about the time it gets ripe, and will rot in a few days after being picked. I have but a few vines. If they rot as usual this season, I shall not plant any more."

Who has had any experience of similar character? Will the friends and enemies of the *Martha* please respond?

Downing's Cottage Residences.

Everything bearing the name of Downing, both Andrew J. and his brother Charles, is welcomed by the public with interest. It is with pleasure, then, that we read the announcement of the issue of a new and revised edition of A. J. Downing's famous architectural publication, under the superintendence of Geo. E. Harney as editor. Mr. Harney has been familiar to the public for a number of years as an architect, and his taste and designs have always been pleasing. No one could have revised Mr. Downing's volume with so considerate regard for Mr. Downing's tastes as has now been done. The literary matter of the older volume has been little changed, except in the matter of estimates of cost of building; but the typographical execution of the volume is much superior. Large quarto pages, with broad margin and heavy tinted paper, add greatly to the embellishment of the new edition. Fully fifty new pages are added, containing a dozen or more new designs of cottages and villas, by Mr. Harney; while a few pages are supplemented by Henry W. Sargent and Charles Downing, containing revised lists of trees, shrubs and plants, and the most recent and best selected fruits, with some account of the newer styles of gardens. The entire volume is a most tasteful example in book making, and is of the highest credit to the publishers, John Wiley & Son, New York city.

A Horticultural Guide Wanted for the Vicinity of New York.

M. B. Bateham, of Painesville, Ohio, writes us as follows :

EDITOR HORTICULTURIST: In common with many other horticulturists, I am anticipating the pleasure of visiting your metropolis about the time of the American Pomological meeting in September, and not having looked at things around there for quite a number of years, I feel that a horticultural guide will be quite desirable. Would it not be well to publish in the HORTICULTURIST for July or August, a brief directory of places of interest to the profession, in the vicinity of New York, and also of Boston, if some friend at the latter place will furnish the same for you? I mean the principal parks and cemeteries, floral and nursery establishments, and the best examples of landscape and suburban adornment. Mention the modes of reaching them, and of going from one to another, with least waste of time, and state what are the principal features of each place, so that persons who can visit only a few, may choose such as are the most important to them. If, in addition, the name of the superintendent of each park, cemetery, etc., was given, it would be a favor to such visitors as may wish to make their acquaintance.

Answer by Editor.—The most desirable places of public horticultural interest to visitors will be as follows :

1. The Central Park, New York; reached by any of the avenue horse cars lines. We know all the principal officers, but do not think they have time to spare to escort any but a large party. The greenhouses in charge of Prof. Robert Demicker, at Mount St. Vincent, will repay any one for a visit. There are some fine specimens of subtropical gardening near them. Mr. Demicker will show anything with pleasure. Should any party of a dozen or more wish to go at one time, we will arrange for some of the officers, including the Treasurer, Fred. Law Olmstead, consulting architect and landscape gardener, to accompany them.

2. At Prospect Park, Brooklyn, are also fine examples of park scenery, wild and cultivated. Leave Fulton ferry, New York city; on Brooklyn side take Flatbush cars direct to Park.

3. The most interesting place for a gorgeous display of flowers is at the flower farm of C. L. Allen, Hinsdale, L. I. Over fifty acres of gladiolus and lilies will be in bloom. Take James slip ferry to Hunter's Point, and then the cars of Stewart railroad, or Long Island Central to Hinsdale. Probably 5,000,000 gladiolus will be in bloom by the first week or two of September.

4. For a rare display of gladiolus and choice greenhouse plants, none can excel those of George Such, at South Amboy, N. J. Take cars from Jersey City, Penn. depot, direct to Perth Amboy, thence by ferry to South Amboy, thence by carriage two miles to Mr. Such's place.

5. For bedding plants, roses, and greenhouse architecture, either the places of Peter Henderson, Bergen Hill, N. J., or W. C. Wilson, at Astoria, are most interesting. For rhododendrons and fine greenhouse plants, the nurseries of either of the Parsons at Flushing.

6. The pear orchard of P. T. Quinn, near Waverly, on New Jersey railroad, will be interesting. Cars run every hour from Jersey City via Pennsylvania railroad.

7. The finest specimens of suburban villa architecture are clustered along the Hudson river, from Spuyten Duyvil to Peekskill. A ride by steamboat will give fine glimpses of the river scenery; and returning by land, one should walk from Tarrytown to Irvington and Dobbs Ferry. Here are gathered more fine and costly residences than in any other space of the same extent in the suburbs of any other city in America.

8. Upon visiting Boston, one need not inquire. Mr. Buswell, librarian of the Massachusetts Horticultural Society, has everything ready to tell. Excellent arrangements are being made by President Wilder, which will give all horticultural visitors a chance to see some of the finest places near the city.

Fruit Crops.

The prospects for fruit growers this year are very discouraging. Grapes are very generally killed in Ohio; blackberries in the Eastern States. The strawberries here were dried up by the drought, and prices hardly averaged ten to twelve cents per quart. Pears were badly cut by late frosts. Mr. Batcham writes from Ohio: "Our apples and pears will be a very short crop, as well as the smaller fruits generally. I have never seen so poor prospects for fruit growers."

Essays.

Among the Essays prepared and to be read at the September meeting of the American Pomological Society, are the following:

Hon. W. C. Flagg, Illinois, on Diseased Apple Trees, and their Cause.

Wm. Saunders, Esq., District Columbia, on Theory and Practice of Pruning.

Thomas Meehan, Esq., Pennsylvania, on Fungi on Fruit, and Fruit Diseases, as Cause, Result, or Concomitants of one another.

P. J. Berckmans, Esq., Georgia, on Cause, Remedy, or Preventative of Pear Blight.

In addition to the above, the following named gentlemen have been invited, and are expected to prepare short, condensed practical essays, or papers, as follows:

Prof. Louis Agassiz, of Harvard University, Massachusetts, on the Geological Age of Fruit-bearing Plants.

Dr. John Strentzel, California, on the Cultivation of the Fig in the United States.

Dr. E. S. Hull, Illinois, on Root Pruning, and how to grow the fairest fruit.

Mark Miller, Esq., Iowa, on Fruit Growing, and Varieties, in Iowa and other Western States.

George W. Campbell, Esq., Ohio, on Grapes, Culture, Varieties, etc.

C. M. Hovey, Esq., Massachusetts, on Pear Culture.

P. Barry, Esq., New York, on How to Grow and Keep Pear Trees in vigor and shape.

Robert Manning, Esq., Massachusetts. Is there a permanent decline in the Apple Tree and its Crop in New England?

P. T. Quinn, Esq., New Jersey, on the Exhaustion of Fruit Trees, and the remedies therefor.

Josiah Hoopes, Esq., Pennsylvania, on the Influence of the Stock on the Graft, or of the Graft on the Stock.

A. S. Fuller, Esq., New Jersey, on Culture and Varieties of Small Fruits.

Wm. Parry, Esq., New Jersey, on the Cultivation and Varieties of the Apricot and Plum.

W. C. Barry, Esq., New York, on the Keeping and Ripening of the Apple, Pear and Grape.

F. R. Elliott, Ohio, on the Cherry.

*Floral Notes.**Window Flowers.*

It is much to be regretted that window flowers are not so often seen as they once were. It cannot be that the taste for beauty is declining. It is rather that the arrangements of modern housekeeping make flowers in the way of convenience. Yet why not make windows to suit? The demands of modern society are all well in their way, but surely they need not be so imperatively exclusive as to banish all floral adornments from our tasteful houses.

The introduction of heaters had some influence in driving away flowers from our sitting rooms, but coal as gas light has been a worse enemy, yet these can easily be kept in place. Bay windows now often have an inside enclosure of glass—making a kind of cabinet, as it were, and in this the plants grow to perfection. But this

arrangement is not essential. A friend, whose window is at all times gay with blossoms, and whose success is the envy of all the neighbors, has nothing but a broad window sill, and she has the window curtains so arranged that they fall between the room and the plants. The lace curtains are down day and night, and the damask over only at night. This seems entirely sufficient to prevent injury from gas and dry air—no plants can possibly be healthier than hers are.—*Gardener's Monthly*.

Harmony of Colors in Flowers.

One of the obscure points of science is the cause of the harmony of colors always observed in flowers. An exchange states that when two colors are found, they are generally complements of each other. The wild asters of Autumn generally have purple rays and yellow disk flowers. The pansy is yellow and purple, and the blue violet has its stamens yellow and its petals a reddish blue. In fact yellow and purple generally go together in flowers.

A splendid example is afforded by the large *Iris Germanica*, the popular flower-de-luce of our gardens. From the white base of its petals the colorless sap passes into its petals, which become of a gorgeous purple, while the beard of the petals becomes at the tip a very rich yellow, though the lower part of each separate filament is not of the purest white. What chemical or physical law determines the arrangement of color, if there be any such secondary cause, is not yet discovered.

Two French chemists, Fremy and Cloez, say that the tints of flowers are due to cyanin xanthin, and xanthein. Cyanin is reddened by acids. A supply of vegetable acid developed in a flower would then turn the blue to rose color, while a scarcely sensible quantity might produce a purple. Xanthin is a yellow from the sun-flower, and xanthein the yellow of the dahlia. There are probably other coloring substances.—*Household*.

Begonias.

This foliage plant is a very desirable one for the conservatory, the silvery markings, distinctly formed, render it an object of great beauty. The hybrids of this plant now being produced, are gorgeous in the extreme.

Imperialis—Very pale green leaves, suffused with rosy crimson, shaded red.

Vittata—Blotched silvery white; leaves pointed.

Sanguinea—Leaves deep glassy green; underside of a deep blood red.

Rex—Leaves very large, purplish green, with a changeable metallic lustre, with a broad silvery zone, around the leaf midway from the center; underside purple.

Madam Wagner—Leaves silvery green, spotted, with very dark edge and centre.

Urania—Nearly black green shiny leaves, all edged with crimson.

Punctata—Dark green leaf, distinctly spotted.

Maincata—Very large leaves, light green, bordered with crimson; dotted underside, with crimson spikes.

Maculata Ricinifolia—Very large leaves, artistically cut and very curiously marked.

Argentea—Silvery green leaves, tinged purple.

Nebulosa—Silvery green, with plainly marked dark margin.

The Begonias do not succeed well outdoors; at least, if bedded out, should have a shaded border. They require plenty of moisture and warmth, with a soil formed of peaty mould and sand. To those who have not had much experience in growing house plants, would advise them not to attempt the Begonia, only upon a limited scale: to the conservatory they are indispensable.—*Ex.*

Flowering Shrubs.

Our flowering shrubs have, and are, giving us a profusion of bloom; one variety in particular I propose to speak of at more length, the Weigela.

This is a most beautiful, and by too far rare a plant in our rural flower gardens. It is easily propagated from layers, or cuttings started in a shaded hot-bed. This beautiful shrub belongs to the genus Dervilla, but owes its popular name to the

German Botanist, Weigel, who introduced it into Europe. Of this genus there are several varieties, the most disseminated of which, being first introduced, is the Weigela Rosea—in pronouneing the name give the soft sound of g. Many seedlings have been produced from this, some of which show decided improvements over the original Weigela Rosea, and Weigela Amabilis, are the two first introduced. Some of the seedlings are: Isoline, flowers nearly white when they first open, but afterwards turn to a delicate pink; Van Houttei has the habit of Amabilis, but flowers of the Rosca Deboisiana have buds of a dark crimson and very dark flowers, the lower lobe of which is marked with a yellow band. The foliage is very robust, of a fine dark green; bush a fine erect habit, and is a profuse bloomer. There are also several variegated leaved varieties; one with greenish yellow leaves, another the leaves of which are of a clear cream-white. Weigela Rosea is the popular variety, and capable of great improvement over the same as generally cultivated. This shrub is covered with a profusion of blossoms in June, pink changing to white. The bloom is so profuse that the leaves are nearly all hid from view. The shrub is of somewhat dwarf growth, growing about three feet in height, and may be trained to form a very ornamental shrub, and one to give a very much more satisfactory show than is too frequently the case. Procure a plant and train it to the tree form by rubbing out all growth from the bottom, except one main stem, for eight or ten inches; head it in and allow the top to form bushy and thick, and our word for it, you will be so much better satisfied with it, that you will hardly recognize it as the same thing as when grown as a bush. The head is formed by successive pinching in, after which the culture is no more difficult than in the other way.

The Japan Quince (*Pyrus Japonica*) is another shrub, flowering somewhat earlier than the Weigela, well worthy of more general cultivation, as they offer us buds and flowers to weave in bouquets when flowers are somewhat scarce. There are white, red, double, and orange varieties, blossoming in early spring. The Japan Quince gives us beauty in the shining gloss green of its foliage after its flowers are gone; and then for a while its fruit possesses an interest to the studious inclined. This shrub is susceptible to the same improvement as to the Weigela, and by careful training may be made an attractive ornament of the garden.—*N. E. Homestead.*

Rooting Cuttings of Carnations.

An amateur from Des Moines, Iowa, having complained of ill success in rooting cuttings of carnations or pinks, though successful with fuchsias, geraniums, coleus, and begonias, he is advised as follows by *The Agriculturist*:

"The varieties he succeeds with we all find to root quicker than the carnation or pink, but not more surely if the proper conditions be observed. These conditions are, that the plant of carnation or pink from which the cuttings are taken must be in a healthy growing condition. The temperature of the sand of the propagating bench in which the cutting is inserted should range from sixty-five to seventy-five degrees, and the atmosphere fifteen degrees less. The sand must always be kept moist, and great care must be taken that neither sun nor draught of air strike the cuttings long enough to wilt or shrivel them, for if once shrivelled nearly all hope of rooting them is gone."

The Best Plants for Hanging Baskets.

A contributor to the London *Garden* says that plants with slender branches which naturally hang down, are most suitable for hanging baskets. "Mother of Thousands"—the "Wandering Jew" with its pretty marked leaves—the Lobelias, and some of the trailing Campanulas or Bell flowers—the well-named "Rat-tailed Cactus," and the so-called "Ice plant," are all more at home when suspended than when grown in any other position, unless it may be when placed on brackets at each side of the window, where they have a very charming appearance. The same writer suggests that the suspended basket or flower-pot should be supported by a piece of cord passed through a small pulley, by which means it will be easily lowered down for the purpose of watering.

Horticultural Notes.

The Triomphe De Jodoigne Pear.

Dr. Swazey, of Louisiana, says that as a market fruit, it lacks color, as a desert fruit quality, but accords to it great value for hardiness, productiveness, and large size. In a specimen orchard of a hundred varieties of pears on quince, set out in 1854, there were but two trees that outgrew the Triomphe de Jodoigne, and not a dozen that excelled it in productiveness—most of them were handsomer and nearly all of them better. This was in our garden. Out in the big orchard, where we had over five hundred varieties of the pear in bearing, the Triomphe de Jodoigne did not equal, either in beauty or quality, one-fifth of them. Few excelled it in soundness, productiveness, vigor or luxuriance of growth. Our experience has been on a strong clay loam; a light sandy soil may produce a different result.

A Wire Trellis best for Raspberries.

For raspberry vines that require support there is no contrivance more simple, durable, and cheap, than a single wire stretched along the line of the row, and fastened to posts driven into the ground every thirty feet. No. 14 wire will be found quite strong enough. This is the size manufactured for use in Western vineyards, and for making grape trellises, No. 14 is preferred to a heavy wire. The figures below give the cost to the writer of putting up nine lines of this sized wire on as many rows of Philadelphia raspberries. These rows are seven feet apart and 460 feet long—a patch occupying not quite three-quarters of an acre. The wire was bought at the factory, 20 per cent. off the retail price. A roll that measured when drawn out a little more than 4,000 feet, cost \$6.50. The chestnut stakes, six to seven feet long, made from the tops and branches of trees felled last winter, were cut and sharpened by an ax-man in one day, at the expense of \$1.50. It took two men and a boy half a day to make the holes with a crowbar, drive the posts, and fasten the wire. Outlay for this, \$2.25; wire staples for fastening the line, 75 cents; total, \$11. With an occasional rotting stake to be replaced, this support will last at least five years, with a mere trifle to keep it in repair. Both for raspberries and grapes stretched wire has been found better for tying than when single stakes are used, and raspberries fastened to wires can be picked much faster than when the vines are left without supports or tied to stakes.—*N. Y. Tribune.*

Black Knot.

The *Gardener's Monthly* in speaking of the black knot on plum and cherry trees, says it should be cut out as fast as it appears, not as the black knot, but as a mere sappy abrasure, green and spongy, above the bark. It is no use to cut it out after a month old. This delay is probably the secret of many failures in removing the black knot.

Heat from Below.

The *Scientific American* says, that in the Garden of Plants in Paris, houses are heated by water obtained from an artesian well 1800 feet deep, which at that depth has a temperature of 82° Fahr., and warm water is carried in pipes under the soil, and that a salad garden at Erfurt is heated in the same way.

How to take care of a Lawn Mower.

This is a question that is often asked by owners of lawn mowers, and it is not to be wondered at when we consider that the general use of these machines is comparatively in its infancy in this country. There are a few simple rules necessary to be followed in using lawn mowers, which we give as follows:

First—The lawn should be kept free from stones and such other rubbish as would tend to injure the knives.

Second—The grass should be cut often, and never be allowed to get over four inches in length (three is better), this makes the work of cutting easy, and avoids straining or breaking the machine.

Third—The mower should be well oiled and kept clean; this is a very important item, as I have seen many good lawn mowers condemned and thrown aside when all they needed was cleaning and oiling.

Fourth—Care should be observed in starting the mower, especially a horse mower. A mower (and all other machinery having a rapid motion) should not be started too suddenly; for a sudden start is liable to break the ratchet, gears, or other parts of the machine.

Fifth—Care should be taken to keep the wiper properly adjusted to the bottom knife. The wiper, or revolving cutter, should be adjusted so as to lightly touch the head knife. If this rule is observed the knives will rarely if ever need sharpening.

The above rules are simple and easily to be understood; if followed, the work of mowing a lawn (with one of our modern lawn mowers) would be light; an immense amount of trouble and expense would be saved, and we would become as noted for our beautiful and well kept lawns, in a few years, as England now is.

Shrubby.

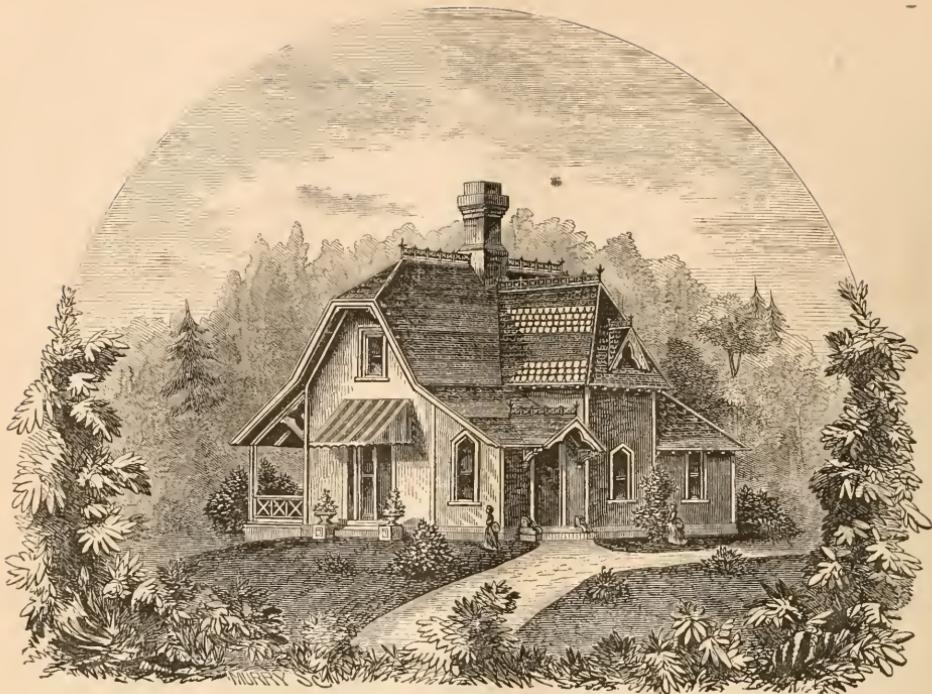
A front yard properly filled with ornamental trees, would be imperfect without a few free-flowering shrubs, dropped around in nooks, and corners, where a tree would occupy too much space, and it would be too bare without anything. Then the space of green lawn directly between the house and street may receive a very few choice shrubs, either scattered singly, or in groups.

We name a few, from which selection may be made with a certainty of having something beautiful:—*Dwarf Double-Flowering Almond*; *Calycanthus*, Sweet-Scented Shrub; *Double Crimson-Flowering Currant*; *Deutzia Crenata fl. pl.*; *Deutzia Rough Leaved*; *Deutzia Slender-Branched*; *Forsythia Viridissima*; Honey-suckle, Red Tartarian; *Hydrangea Paniculata Grandiflora*; *Lilac*, Persian Purple; *Lilac*, Persian White; *Mezereon* Pink; *Prunus Triloba*; *Purple Fringe Tree*; *Japan Quince*, Double-Flowering; *Spiraea Double-Flowering Plum Leaved*; *Spiraea Lance-Leaved*; *Syringa*, or Mock Orange; *Viburnum*, Snow-Ball; *Weigela*, Rose-Colored; *White Fringe*—there, we set out to make a short list, and it has swelled to twenty-one, and yet we have left out a great many that we could heartily commend, as beautiful shrubs. Nearly all of these bloom some time between the first of April and the last of July. It might be desirable to have more blooming in autumn, but that is not in accord with Nature's plan, and we must be content with fruits at that season.

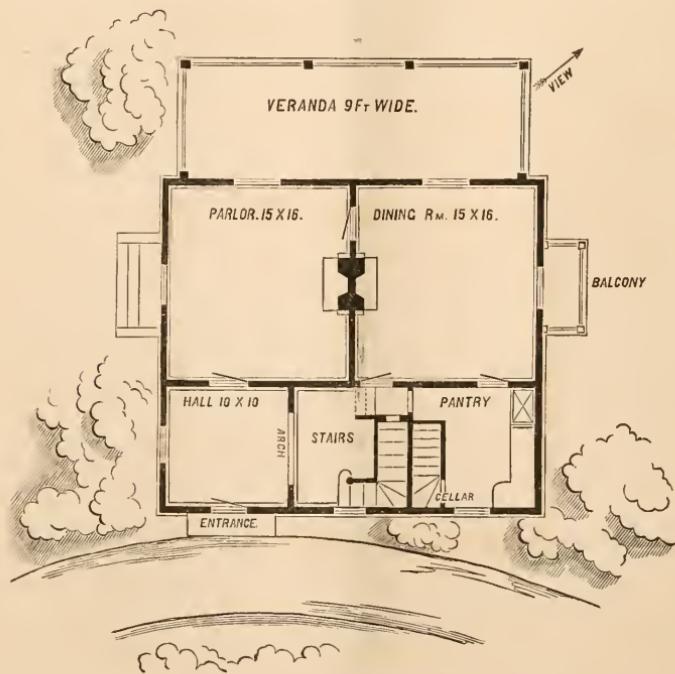
For those who may wish a smaller list to select from, we have italicized the finest of our list.

Forcing Asparagus.

Those who are fond of this delicious vegetable, and desire to lengthen its season, can do so with little trouble or expense by starting some roots under glass in a hot-bed in the early part of March. Two sashes, 3x6 each, will, under careful treatment, give a couple of bunches every other day for a month or so, until such time as the out-of-door growth comes into market. The hot-beds can be made in the way described in the *Weekly Tribune* of January 19. Old asparagus roots are the best for forcing. When the bed is made the roots may be set eight or ten inches apart and covered with about three or four inches of rich soil; then put on the sashes and cover at night with straw mats or other covering to protect from cold weather. The bed will require frequent watering to keep the earth moist; this should be done at midday, and always with tepid water. The temperature of the bed may be high up to 70 degrees. This plan of forcing asparagus could be carried on with some profit by florists by arranging beds of earth under the tables in forcing-houses, and planting old asparagus roots. The heat requisite to start young plants would be quite enough to force an early growth of asparagus, which would sell readily at high prices in market during March and early part of April.—*Tribune*.



A SIDE HILL COTTAGE.



PLAN OF FIRST FLOOR.

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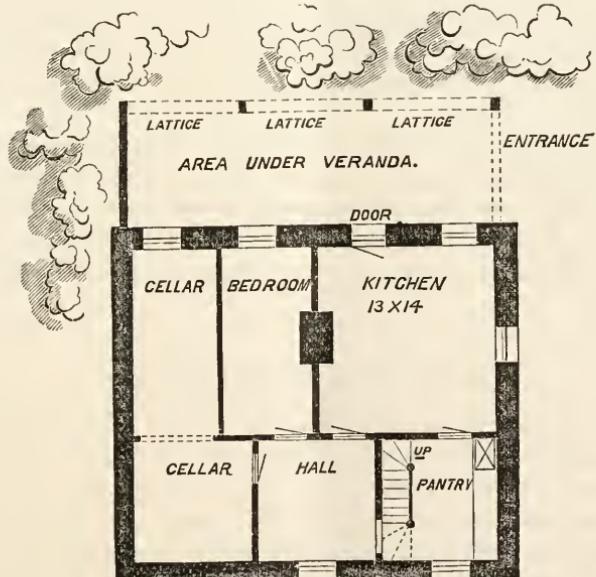
A Hill Side Cottage.

From New Edition Downing's Cottage Residences.

THIS cottage was designed for a situation where the ground descends very rapidly away from the line of the front, and this peculiarity was taken advantage of to get a kitchen room below — though enclosed on one greater part of making them and pleasant story.

The base-
ed as follows :
anda is an area,
which is two
ground and
brick. This
latticed up so
space is quite
forms a pleas-
place in the
The kitchen
it is 13 x 14.
joining it is a large pantry, containing a dumb waiter rising to another pantry in
the floor above, besides a stairway up, and sundry shelves and cupboards. There is

and servant's
the main story
tirely out of
side, and the
another side,
quite as dry
as the upper



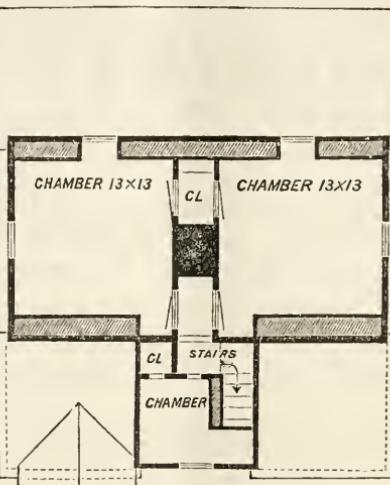
Plan of Basement.

ment is arrang-
under the ver-
the floor of
feet above the
paved with
area is neatly
that the whole
private, and
ant working
summer time.
opening from
feet, and ad-

a hall opening into a servant's room, 8 x 14, and into two good cellars, both of which have floors laid on chestnut beams bedded in grout, as in fact have all the other basement rooms.

The cellar is 8½ feet high in the clear, and the walls are of stone, with the exception of those fronts which are exposed—they being of brick and painted.

The principal story 10 feet square, and a same dimensions, separated by a screen made of are 3½ feet wide, and for coats. The pantry and is fitted up with butler's pantry, sink for plied with hot and cold. The parlor and dining same size, 15 x 16 feet. French window through the yard, and the dining window opening out. Both rooms connect wide. This story is



Second Floor—Side Hill Cottage.

In the second story, a passage at the head of the stairs opens into three chambers, two of which are 13 feet square, and the third about 6½ feet square. This story is 10 feet high in the middle of the room, falling away to 3 feet at the extreme eaves, where they are furred out to make the finished height 6 feet in the lowest part. The spaces furred off may serve for closets.

This cottage was designed to be a frame cottage, boarded and clapboarded, and also filled in with brick for greater protection against cold. The interior finish, of pine stained, or of chestnut oiled; and the floors of all of the first story of Southern pine, laid with a border of black walnut all around, 12 inches wide. The floors of the second story of narrow pine plank. The estimated cost is \$3,200.

has an entrance hall stairs and hall of the rated from each other chestnut. The stairs under them is a closet is 10 feet square also, cupboards, and has a washing dishes in, sup-water from the range. room are both of the The first has a large which one can pass to room has a similar upon a large balcony. with a veranda 9 feet 10½ feet high.

a small hall-way or

Profits from Small Farms.

THE following account of how a small farm and truck patch of twenty acres was managed upon Long Island, is taken from a paper read by J. W. De Lee Ree, president of the Farmers' Club at Farmingdale, N. Y. The design of it is to show how a living is made on small farms of twenty to thirty acres, near New York, and that larger farms than this prove to be less profitable than those smaller :

When practicable, such a farm is divided into seven parts, six of which are three-acre lots for tillage, and the seventh is occupied with the buildings, poultry yard, kitchen garden, and an orchard of about one hundred and fifty apple and pear trees. Other fruit trees, such as cherry, are planted by the road side, and so answer the

triple purpose of ornament, shade, and fruit. Grass being the great desideratum, a good farmer does not rest satisfied until he makes his fields yield at the rate of two tons to the acre the first year, without much shrinkage for the next two years. With this view rotation is practiced, and usually a six-year course, in the following order: The first year corn is planted on sod ground, with manure in the hill; the second roots, sufficiently manured to be followed by wheat the third, and by grass the three succeeding. Half the eighteen acres is thus kept in grass, three being broken up each spring, and three seeded down each fall. But, if one acre is planted with (say Early Rose) potatoes, they can be harvested in season to sow the same by the first of August in turnips, yielding four hundred to six hundred bushels. If the farm contains twenty-three acres, another lot and another year is added, corn being planted two years in succession; if twenty-six acres, grass seed is sown when the corn receives its last dressing the second year; the field is grazed one year, then roots, wheat and grass follow. On a twenty-acre farm, tilled as above described, the crops, well cared for, will average about as follows: Three acres of corn, 55 bushels per acre, at 90 cents per bushel, \$148.50; three acres of potatoes (or an equivalent in roots), 200 hundred bushels per acre, at 65 cents per bushel, \$390; three acres of wheat, 25 bushels per acre, at \$1.75 per bushel, \$131.25; nine acres of grass, $1\frac{2}{3}$ tons per acre, at \$20 per ton, \$300; profit on 200 hens kept for eggs, \$1.50 each, \$300; on two cows, \$75 each, \$150; on orchard, \$2 per tree, \$300—total \$1,719.75. Outgoes: for board of team, at \$1 per day, \$365; for manure purchased, \$200; interest on farm and buildings, valued at \$3,000, and stock and tools, valued at \$1,000, at 7 per cent, \$280; taxes \$20—total \$865. This deducted from \$1,719.75 leaves a net profit of \$854.75. Add to this the profits from the garden, the bees, the pigs, etc., and it will give a clear income of about \$18 per week the year round. That is, the judicious and industrious cultivator of a twenty-acre farm receives a salary equal to that of a first-class mechanic, besides the advantages of outdoor instead of indoor labor, of great variety instead of monotonous uniformity in his work, and especially of being his own master, which, to a person of independent, self-reliant spirit, is of no small account. It may be thought that, all the hay being reckoned at market value, the profit on the cows is put too high, but the straw and corn fodder (or their avails), and what turnips can be raised after a crop of early potatoes, will afford abundant feed for two cows through the winter. There is no cheaper way to keep cows in first-rate order than to raise turnips enough to feed one bushel per day to each through the winter. On some small farms as many as five cows are kept. In that case less hay is cut, and what is chiefly fed out. Consequently more manure is made and less bought. But the more cows the more work in the house, and as the usual aim is to get along without outside help, the sources from which profits are sought on the farm are often regulated by the state of the family in respect to the relative amount of outdoor and indoor help it affords. The fact is not overlooked that all small farms do not yield a profit equal to the above estimate; while some are made to exceed it, others are made only to yield a bare subsistence. But in the latter case the failure can always be traced either to a soil of poorer than average quality, or to a lack of intelligence and aptitude for acquiring it, or a lack of sound judgment, or of industry, or some similar cause.

Orange Culture in Florida.

BY AL FRESCO.

[CONCLUDED.]

THE question will be asked : " Will not orange culture be overdone and the fruit rendered unprofitable ? " We are satisfied to the contrary ; for the area where this fruit can be produced is limited, and the demand great and constantly increasing, as this great country is being settled and opened up by steamboats and railroads. I have been somewhat of a wanderer, and it has been my lot to taste oranges grown in most orange-producing countries of the world, and have no hesitation in stating that the oranges of Florida are far superior to those of any other portion of the globe, and as soon as known and appreciated, will displace those of the West Indies and the Mediterranean. In Florida the culture of the lemon has been neglected ; and we are satisfied that it can be rendered more profitable than the orange ; and such lemons as Florida produces cannot be found elsewhere.

Unfortunately for the pockets of experimenters, they have mainly confined their researches to the St. John's river, and have planted groves on the worse than poor soil along its banks, to reap disappointment. After a careful examination of a large portion of the State, we shall express our views regarding certain localities. For nearly three centuries St. Augustine has been celebrated for its orange groves ; but the small amount of available land is valued at such a high figure as to prevent the man of moderate means from investing. South of St. Augustine, on the Halifax and Indian rivers, excellent land can be obtained at a moderate price, and the best of fruit can be produced ; but for eight months in the year existence becomes almost impossible, owing to the presence of annoying insects. The visitor is attracted by the scenery of the St. John's river and by its pleasant winter climate ; but if he carefully examines the enlarged spleens and the waxy complexions of those he meets at the steamboat landings, he will instinctively make his will and purchase a head stone before he settles on the river between Palatka and Lake Monroe.

On the Enterprise side of Lake Monroe superior fruit can be produced, but the land is comparatively thin and poor. South of Lake Monroe, from five to twenty miles, land adapted to the purpose can be found, and numerous large groves are being planted. On the headwaters of the Ochlawaha river some admirable situations are available.

In the neighborhood of Brooksville vast bodies of the richest land in the world exist ; and cleared hammock land, upon which manure would be unnecessary, can be purchased at from eight to fifteen dollars per acre. The largest and most marketable oranges we ever examined were produced in this locality. The region is high and the land rolling ; water excellent ; heat of summer not so great as in the North ; health of the region unsurpassed, and in every way a desirable point for settlement. Around Orange lake, distant about fourteen miles from Ocala, is a region well adapted to the culture of the orange. Some of the largest wild groves in the State are to be found at this point. In company with Mr. Harris, of Ocala, we examined one of about five hundred acres, and found the undergrowth consisting of wild orange trees so dense as to be almost impassable. Near this wild grove, cleared land, well adapted to orange culture, can be purchased at from six to twelve dollars per acre.

From actual observation and from inquiries, we would recommend the intending emigrant to examine the gulf coast from Clear Water harbor to Punta Rosa. In this region the orange and lemon are uninjured by frost. The range of the thermometer during the summer months is lower than in the Northern States, seldom exceeding 90°. When this point is attained persons do not suffer, for the land is fanned by a refreshing sea breeze. During the months of June, July and August, showers of short duration are of almost daily occurrence, the rainfall for these three months exceeding thirty inches. In this region insects are not troublesome; the people are intelligent and more than hospitable, and the health unequaled by any portion of the United States. We have not visited Cape Romano, but from information we have collected, we would willingly become one of the twenty to make a settlement at this point. In this locality the orange, pine apple, banana, coffee, and other tropical fruits would prove more than successful and profitable.

Many Northern people ridicule the statements of travelers regarding the productiveness of orange groves, and in consequence we feel a delicacy in referring to results. In the summer of 1868, in company with that intelligent horticulturist, W. W. Williams, of St. Augustine, I carefully examined a grove at St. Augustine, planted thirteen years. The soil was of superior quality, and the trees planted about sixteen feet apart. We counted the fruit upon a given number of average trees, and thereby estimated the yield, which, at \$2 per hundred, amounted to over \$2,000 per acre. During the summer of 1872 rain was deficient, and the high winds injured the crop, reducing the yield two-thirds below the average. Yet the diminished crop proved remunerative.

In February last we examined the Ginn grove, near Melonville, and found it to consist of 600 trees about twenty years old. For many years this valuable property has been neglected and the soil uncultivated. The ground was a network of grass and weeds, and the trees were covered with moss and lichens. It surprised us that trees could exist, much less produce fruit. Although there was but one-third of a crop, the yield was 175,000 oranges, which were sold on the tree at \$2 per hundred, the purchaser to gather the fruit; amount realized, \$3,500. One tree budded in 1856, producing 3,290 oranges. One tree budded in 1848, growing on the Eden grove five miles from Melonville, produced 6,000 marketable oranges, the crop yielding \$120.00. Col. Hart's grove at Palatka, numbering 600 trees, produced but one-half of a crop, yet he shipped 300,000 oranges, which, at two cents, would amount to \$6,000. A portion of his crop sold at the grove at from five to ten cents per fruit. At Manatee we inspected a lemon tree, growing uncared-for, by the side of the road, and at the lowest estimate we believed the crop to be 1,200. We gathered several of the fruit, and on our return home five weeks afterwards, we weighed one of the lemons and found it to weigh over eighteen ounces, avoirdupois.

Some of your readers will inquire: "How am I to keep the pot boiling until a grove produces fruit?" If near steamboat or railroad communication, early tomatoes and potatoes would prove remunerative; rice, cotton, sugar cane, cassava, arrow root, sweet potatoes, oats and tobacco would prove paying crops. The latter is a successful crop, and for aroma and quality nearly equals that of Cuba. Along the Gulf coast, south of Clear Water harbor, the pine apple, lemon and banana are a success-

and prove a paying crop. To those versed in horticulture I would simply remark, that we annually import roses in quantity ; that they are raised in immense quantities by our florists, and yet the demand is greater than the supply. Florida is the home of the rose, and in one year from cuttings plants will attain a remarkable size ; and we are satisfied that their production would prove remunerative. If any of your readers could see with what luxuriance camellias and gardenias grow in the South, they would agree with me that there is money in their culture. My impression is, that there are openings in Florida for nurseries. Grape vines, fruit trees and ornamental plants are obtained from the Northern States. On the main lines of travel there is a constant and increasing demand for cut flowers during the winter months. During the course of last winter 40,000 persons visited the State ; and it is probable that the majority possessed floral taste, and would have purchased cut flowers, but they could not be obtained.

On the main lines of travel during the winter months there is a constant demand for superior vegetables, but they are not produced. As one source of income, I may refer to the annual demand in our Northern cities for tuberoses and lilliums ; and with cheap land and cheap labor, I see no reason why these bulbs cannot be profitably grown. With cheap lands, inexpensive houses, cheap lumber, a hospitable people, frequent summer rains, vegetables the year round, meat at from five to seven cents per pound, game and fish in plenty, in many localities a bracing sea breeze and perfect health, I see no reason why emigrants should wander westward and slave for six months to raise sufficient to keep themselves and stock for the other six. In conclusion, we may remark that planting an orange grove will pay better than any other description of fruit culture in the United States ; that with carefully-prepared soil, selected varieties, and fair culture, the planter may anticipate a return of from \$500 to \$1,000 per acre per annum.

If you shall deem it of sufficient importance, I shall only be too happy to supply reliable data regarding soil, climate and productions of the State ; and may remark, that I cannot consent to reply to letters ; but if any of your readers desire information, I shall only be too happy to welcome them to my residence and furnish such information as I may have obtained regarding the State.

The Story of a White Camellia.

THE following beautiful sketch is translated from the German, showing the love of queen Josephine for the Camellia, to whom it is said is to be given the credit of the first introduction of this stately flower within her lovely home :

The time of roses is done ; quickly done !—as ever—it is gone. Summer and autumn rustled by like a dream and gathered all the flowers in their train. Only in great quiet rooms of palm-tree houses and winter-gardens are found bright blossoms and buds, which flourish in spite of the stern winter-king, who frowns on everything but his ice-flowers and tendrils.

It is the proud camellia which now unfolds her glossy leaves, polishes the folds of her drapery and salutes us above them ; graceful as a princess. There seems to be something embodied in this charming, unapproachable flower, that reminds us of the words “Touch not the queen.” With unspeakably earnest eyes, it gazes upon us

and remains a stranger to us always—in spite of its beauty—a cold, indifferent heart—without language—without fragrance.

The proud camellia will never be the gift of love, like the rose—like the violet and forget-me-not. Beyond the sea lies its home, and it is said that there a gently intoxicating fragrance flows from its leaves, but the chilly breath of the North has made the stranger-plant mute, like so many frail human plants who have been removed from warm, cheerful homes into cool shades or transplanted from their native, tender soil into rocky wastes.

But it was a woman's hand, under whose tender care the white camellia first saw the light in France and afterwards bloomed in Germany—the small, beautiful hand of the Empress Josephine.

"Fortunately Malmaison is not destroyed," wrote a friend in the spring of 1871. "The accompanying little box contains a white camellia from the greenhouse. It was Josephine's favorite flower, and will bloom anew beneath your warm eyes. I know full well what deep sympathy your heart cherishes for that charming creature, and I sought out that quiet asylum for your sake, almost at the peril of my life. I reached there unobserved and in safety, and am happy to relate some pleasant associations connected therewith. I was permitted to throw only a hurried glance upon all kinds of interesting relics. I saw a small fan with a golden handle, which is said to have been sacred to Josephine's use, and a dress of pale blue silk was shown me, over which the great Corsican had poured the contents of an ink-stand, because the color was distasteful to him—yea, verily, my dear, a real ink-stand! according to the *on dit*; his actions corresponded at all times, to the one described. If a robe of the Empress failed to please him, and was exchanged for another, after which she chanced to reappear in the former proscribed robe—in the face of his first slight gesture of reproof—suddenly and without pity flowed the black, destructive fluid upon it. Just such a dress she wore in her solitude, the dear woman! how many traces of tears were visible on this rich, elegant dress! She could not certainly have valued that ruined splendor. It was, doubtless, its association with that painful circumstance which made her treasure it even with bitter tears."

"I am glad, moreover, that your favorite was so woman-like in many ways, which you cannot fail to appreciate. For instance, that things of by-gone days were so cherished by her; of many such, there are still preserved velvets, silks, laces and the like. She also possessed one hundred and fifty real shawls!!"

This woman was truly a flower-fairy with her sensitive heart and liberal hand, whose grace and goodness disarmed the bitterest enemy. Like a gardener, she assumed the care of flowers at Malmaison; her greenhouses and violet-beds were under her special supervision.

In her days of fortune and splendor, she surrounded herself with violets, those most modest of all flowers—between the pearls and jewels of her crown—upon the seams of her trailing, gold-embroidered dresses, everywhere were nestled those delicate blossoms.

Then, when the darkened time of her abandonment came, Josephine nourished, as her prerogative, the quiet, stranger-flower, which was as homeless and lonely as herself.

There was a German musician who visited the garden at Malmaison, at the time when the shrubs were planted, which afterwards extended so protectingly their branches, concealing the asylum of the abandoned from the eye of a curious and merciless world.

Friedrich Reichardt writes, on the 29th March, 1803, concerning Malmaison, to a friend in Berlin, as follows : " We drove towards this melancholy place, where stood the insignificant, poorly-built country house, in a barren, open field upon the highway, surrounded by an intrenchment and inclosed by a wall. We would gladly have taken a closer view of it, but had scarcely reached the spot when Bonaparte, with his family and suite, drove thither for their abode during the beautiful spring-time, and we accordingly turned rapidly away. Bonaparte himself drove, from the foremost box, an open coach with four horses. Beside him was seated an officer in a red habit, probably a *prefect du palais*, and in the coach were seated his wife and her daughter, Madame Louis Bonaparte.

" Madame carried a large bunch of violets in her hand. A number of mounted gens d'armes rode in advance and behind the coach, besides several generals and high officers.

" Many grooms rode so near to the coach horses, that, to an observer, they appeared to be holding the reins of the same. A strong guard already held possession of the entrance and fore court, whilst patrolmen rode round the walls, scanning narrowly the intrenchments, though it was yet daylight.

" Over the whole remaining way we were met by a multitude of carriages filled with actors from the French Theater, and musicians and singers, on their way to give entertainment that evening, for the first time, in the little House-Theater at Malmaison. However elegant and artistically adorned the interior of the old house may be, the external surroundings were bare and almost sterile. The planting of a young forest here is begun, and in the greenhouses are to be reared all kinds of plants.

" They tell of an exotic white flower, the care of which Madame Bonaparte herself supervised. Do you not remember the lovely parks at St. Cloud ? To forsake them and the excellent dwellings there for Malmaison would be something incomprehensible to us, did we not know how gladly the first consul isolates himself.

" Near the house, in the direction of Paris, stand large barracks for the Consul's guard, filled with soldiers. The barracks are probably six times the size and far better built than the dwelling of the first consul."

What a picture is presented by this plain account of the German musician ! Like a *fata morgana*, it ascends and passes like a panorama before our eyes.

On a clear night in spring lies Malmaison enveloped in moonlight. In the garden are blooming violets and cherry trees, whilst nightingales are trilling their emulative songs. On the broad graveled walks, even the little stones are discernible by the silvery light that is spread like a mantle over them. The blooming branches cast their transparent shadows over the garden-beds. The lights in the windows are extinguished, excepting in the right wing, from which it shines brightly forth, casting a reddish lustre over the turfу lawn. This is the study of the first consul. A world of dauntless thoughts and plans are lodged in this head, which is supported by a small white hand. This wonderful Cæsar-profile is seen in a dim light.

The rolling of the last carriage-wheels has just died away in the distance, which convey back to Paris the merry band of comedians. How they laugh and chat over the puppet-theater at Malmaison—these careless favorites of the Parisian world! The young actresses assert defiantly that they will not appear in that place again, and their amiable admirers kiss their hands in token of their approval.

The graceful *Madame St. Aubine* trilled with her elegant attendant, *St. Pal*, a new duett by *Paesiello*; the pretty vocalist *Contat*, who personated *la coquette corrigée*, to the delight of all, listened, allured to the impassioned eulogy of the handsome *Baptiste*, her first lover. The nearer they approached to their beloved Paris, the louder their joyousness. *Vive la joie!* *Vive la ville de Paris!* rings clear from every throat. The incubus of Malmaison was shaken off.

So still was it that night in the garden of Malmaison, that one could distinctly hear, even at quite a distance, the low breaking of a silk shoe and the light footstep of a woman, as her shadow fell on the walk which led to the greenhouse. In full moonlight now appeared a form. Was it a fairy or a queen? A long, white dress grazed the ground, embroidered to the knees with colored foil. A slender diadem of opals confined her dark, wavy hair; on her neck, over which only a light blue shawl was thrown, fell a short gauze veil spangled with gold. Rich lace enveloped her waist, falling over her beautiful arms below. This dazzling apparition vanished in the dimly-lighted entrance to the conservatory. The old gardener was awaiting his protectress there.

"How are my flowers?" said the gentle creature. "I could not come earlier, *Pierre*; the play lasted so long, and only this moment has the consul dismissed me." And whilst she was uttering these words, she hastened forward with the eagerness of a mother, who, returning from a festival, yearns to kiss her sleeping child!

"I hope, Madame," said the old man, tripping after her, "it may blossom, we shall preserve, at least, one, the largest of the buds. If Madame visits it often it will live—this stranger-flower. It needs light and light always, and very strong light. Our sun is too cold here. So human eyes must look warmly upon it."

Josephine now stood still. Separated from the rest was standing one slender plant, with dark green leaves. The light of the lamp fell upon the beautiful female face which now bent with an expression of fervent tenderness over her foster child—her Camellia.

It was the first, the only one that might bloom at Malmaison! All Paris had not, as yet, beheld a white Camellia.

Until that hour only dark leaves had unfolded themselves again and again; the promised marvel had kept them waiting long, in spite of the most watchful care; so long, that the consul had long since grown impatient, and ceased to inquire after his wife's favorite. At last buds appeared which slowly dilated and filled. Every day Josephine had driven to Malmaison to visit her flowers, and to-day—the day of their removal hither—she had been granted no moment of repose to satisfy the secret longings of her heart.

It was now long after the hour of midnight. "Oh! it had surely grown since yesterday; the one large bud!" whispered she with a smile of delight. And her lustrous eyes were fastened admiringly on the still bud which was yet wrapped so

snugly in its many covers of green. Only at the top, at the outermost point, it shone more clear ; there was the veil becoming transparent.

" It is cold here, whilst outside it is now spring, and I only can understand thee, poor flower ! we both know a warmer sun !" And filled with a sympathy which overflowed from a heart suddenly seized with a home-longing, this daughter of the South bowed herself, and her lips touched, lightly as a breath, the Camellia-bud. Then she slowly turned away and walked with lingering steps back through the labyrinth of flowers, pausing here and there and stroking, caressingly, a broad, velvety leaf, or bending to breathe deeply the fragrance of a flower.

Like the veritable flower-queen, she wandered there in her white robe and sparkling veil, her girdle ornamented with a bunch of violets, and followed meanwhile, by a good spirit ; even the bowed form of the old gardener.

Very many times Josephine glided, at late hours, into the conservatory before the much-loved flower bloomed ; often in the rain and wind, when the crystal drops would lodge in her hair and on her long, dark eyelashes, and she, with childish glee, would shake them off.

" I cannot sleep when I fail to bid them good-night," confessed she to old *Pierre*. At last she possessed, in all its chaste magnificence, the white Camellia-Queen. One evening she entered the consul's study, with beaming eyes and glowing cheeks. She raised not her head, but walked with the assurance of a beloved wife, lightly across the room to his side, and laid the wondrous flower upon the papers which riveted so closely his gaze.

" There it is, and with you it shall bloom and die !" whispered the beautiful lips.

And the first white Camellia at Malmaison bloomed and faded upon the study table of the consul.

Later, when Josephine wore the French Imperial crown—and this she did with the meekness of a violet—the exotic from her native land shared, with her other favorite, her gentle protection and care. Her heart and her thoughts fled for comfort and consolation to these precious flowers.

In the diary of a gifted princess is recorded, touchingly, the account of her visit to the apartments of the Empress in Paris, in 1808, as she witnessed the profusion of flowers with which this graceful woman was surrounded, and with which she was associated from day to day.

" Everywhere were beautiful paintings," she writes, " which belonged to the picture-gallery, and which are returned thither every year to make room for new ones. The tables were rendered strikingly beautiful by a collection of the rarest flowers of marble whiteness. In every corner were porcelain vases filled with costly bouquets ; in four of which—of the lovely blue *Sèvres fabrique*—were deposited rare blossoms, at least four feet in height. In this room is the excellent and well-selected library of the Empress. The book-shelves, which surround the entire room, contain the most admirable works, especially in the department of botany."

" In this apartment spends the Empress more than half of her time. Alexander Von Humboldt's *Productenkarte* was placed in front of her easy chair : his work lay open near it, and appeared to have been the last to occupy her mind."

These works of our great German naturalist followed her in her exile. There is

nothing more touching than the picture presented by this gentle being, buried in her solitude among flowers at Malmaison. From that time her grief-stricken heart knew but one effort at culture, save that of her flowers—the memory of that man whom she loved and worshipped to her latest breath.

No other feet than hers were permitted to cross the threshold of her desolate room, where she collected all these reliques of her former happy days. Here might no furniture be moved from its place; no leaflet carried away. With her small, delicate duster in her hand, she cleaned this, her sanctuary, day by day. For hours she sat alone in this favorite ambush. Every morning she placed fresh bouquets upon her work-table, and in the season of Camellia blossoms—and they bloomed nowhere so beautiful and abundant as at Malmaison—she deposited each day a white Camellia between the leaves, which was to live and die for *him*; like that first white blossom which she so joyfully brought and laid beneath his eyes.

And she herself lived and died for him—with heart-yearnings for her sunny home
—*a poor, lonely flower.*

Lime vs. Ashes.

PLACE a piece of iron or steel in damp ashes, and it will soon corrode with rust. Place the iron or steel in lime mortar, and it will remain bright and the rust will disappear. Sow small grain where a brush pile or log heap has been burned, or where a liberal dressing of ashes has been applied, and there will be a rank growth that will probably fall and never mature. Sow the grain where lime has been applied to the soil, and the grain will grow with stout, stiff straw, and plump, hardy heads that mature well.

Ashes cause a rank growth of the herbaceous part of plants, such as leaves, straw and grass; lime induces a growth of the woody part of plants, and the grain or fruit. Ashes stimulate heavy muck, and rich or virgin soils. They appear to disintegrate or make available what is already in the soil. They seem to act specially on vegetable mould and manures from the barnyard. Apply them to the most offensive pile of compost, and they will render it inodorous and *worthless* as a fertilizer, their effect being that of releasing the ammonia from the compost. Ashes used with a compost heap of decaying vegetable matter would be wasted—worse than wasted—as they render the compost inert as a fertilizer. Applied to an offensive sink, sewer or cesspool, they serve an excellent purpose as a disinfectant. They promote the growth of grass and forage especially, proving very valuable on low lands; will stimulate trees, etc., to a vigorous growth when the soil is strong. They exhaust strong soils and injure poor ones.

Lime improves poor soils, especially sandy ones, by rendering them more compact and capable of retaining fertility when applied. As a promoter of health and vigor in apple trees, it is one of the best applications that can be made to the soil. Under its influence trees mature well, the fruit is finer, and trees are freer from disease. Lime may be applied with benefit on most soils and many plants, but is of special value to the apple tree and strawberry plant, while ashes are valuable on heavy or rich soils for the grosser feeding of plants, such as our native plums and currant bushes.

A. L. HATCH.

Ithaca, Wis.

A Princely Home in the Suburbs of New York.—How Railroad Princes Live.

THE following sketch is from a correspondent of the *Boston Transcript*:

Forty miles from New York city by steamboat, up the East river, through Hell Gate, and out into Long Island sound, one comes to a pretty little village nestling amid trees, and stretching down to the water's edge, called Glen Cove. The soil of this place is famous for the wondrously fine asparagus it produces, and which fetches in the New York market one-third more than that grown elsewhere. Immense quantities of it are daily sent to the great city. To us the principal attraction of Glen Cove is the elegant country seat belonging to S. L. M. Barlow, a wealthy New York lawyer. This gentleman, a son of old Dr. Barlow, has grown very rich in his profession, and has also managed to get a good deal of money out of the Erie railroad—that never-failing source of fortunes for all men who are so happy as to get on the inside track. Mr. Barlow now spends his money like an American, and lives like an English lord.

The estate he owns at Glen Cove, L. I., was first improved and built upon by Burton, the actor, who put up a fine house in the midst of a park of about forty acres, finely situated on a bluff on the edge of the sound. Mr. Burton built extensive greenhouses, which he attached to his dwelling; he set out trees, constructed artificial lakes, and did much to improve the property.

Finally he died, when the estate fell into the hands of Mr. Kennard, the English railway prince, who was at one time so largely interested in the Atlantic and Great Western railway. Mr. Kennard determined to make his permanent home at this place, one of the most charming spots anywhere near New York. He tore down a portion of the elegant Burton mansion, moved the hot-houses some distance away, and built a large and magnificent house in the style of a Swiss chateau. He spent money lavishly, as if he had been a prince, and in turn, so we are informed, was robbed on all sides by carpenters, masons, contractors, painters, etc. But his money held out until a palatial country seat had been erected, which was most elaborately decorated, inside and out. A great deal of the outside of the building was actually covered with gold. It had towers, piazzas, wings and elaborate carvings in all directions. The great hall and dining room of this mansion are very beautiful, with inlaid wood, carving, arches, pillars, etc. The whole outside of the house is elaborately ornamented. He added to the hot-houses until they covered a vast extent of ground.

Like many another man, he lived beyond his means; he had serious domestic difficulties, and finally he was obliged to mortgage his estate to Mr. Barlow, who was his lawyer. In the end the lawyer got possession of the whole property at a figure far less than the original cost. Since the last owner took possession, he has made constant improvements, and is at work with a large force of men, to-day. He employs twelve gardeners and three men to look after the hot-houses. He has a large number of house-servants, some of which are Chinese, and there are men at the stables, stone-masons, etc.

A walk through the extensive greenhouses revealed one of the finest collections of tropical plants in the vicinity of the metropolis. The central house is devoted to palm-trees, of which there is a fine collection. Two very large banana trees are

also in this house, in a bearing condition, their tops bending over with the weight of fruit. A large cinnamon tree is also growing here, as well as oranges and lemons. A smaller house back of this palmery is devoted to those wonderfully curious and sweet-smelling plants, known as orchids. We saw beautiful butterfly orchids and many air-plants, clinging to bits of wood suspended in the room. Each side of the palm-house is a large house for grapes. The southern grapery was full of large and delicious clusters of the white sweet-water grape and the black grape. One vine held no less than two hundred pounds. In the other grape-house the vines are later, so that grapes may be had fresh the year round. Beneath the ground there are extensive vaults for raising mushrooms. A large house is devoted to the growing of pine-apples, many of which are now in a bearing condition. Some of the delicious fruit is nearly ripe. Other hot-houses are filled with ferns, foliage plants, roses of various kinds, strawberries, etc. Last winter over one hundred tons of coal were consumed for the purpose of heating the hot-houses alone.

Connecting the greenhouses with the mansion is a rose-walk, probably the largest and finest in America. A great variety of twining roses have been trained over a handsome open-work archway, which is so arranged that it can be illuminated by night by gas. When the roses are in bloom, nothing more beautiful can be imagined. Mr. Barlow is evidently fond of flowers, for his extensive grounds are filled with them. A large flower garden at one end of the house has been laid out in the English style, the beds bordered with box, and each one filled with some choice variety of flowers. We observed in one part of the grounds over one hundred varieties of new standard roses, recently brought from England, which had been planted this spring. Many other points of interest, as the statuary, fountains, groves, etc., might be mentioned, but they are common to all well-kept lawns.

The Wardian or Fern Case.

Read by Mrs. H. M. Lewis, before the Madison Horticultural Society.

HOW often we hear persons say: "I know that I shall never succeed in growing fine healthy house plants. The leaves grow small and turn yellow before they fairly develop, and my plants seldom or never blossom." To such unfortunate persons I would heartily recommend the fernery.

Persons using gas and furnaces often find the use of them a great detriment to the free bloom and healthy growth of plants, and find the fern case a never-ending source of pleasure when understood and managed successfully.

The Wardian or Ward case was invented by a Mr. Ward of England, and known about 1840. Its first public appearance was made at the World's Fair in 1851.

If any one wishes for an elegant and expensive case, it can be obtained by sending to almost any of the large cities for it. One mounted upon a rustic table, with niches or brackets, for growing any ivy or choice flower, is very beautiful. Almost all sizes and shapes can be found; or one can be ordered at home and made at a cabinet or tin shop. Perhaps you can make one yourself, with help from the hired man, that will please you most of all, out of a cheese or other box, covered over with strips of bark, acorns or lichens tacked or glued upon the outside and varnished. Arrange

the plants, put the high bell-shaped glass over it, and place it upon a small center table.

For growing two or three ferns and a Lyeopodium for a parlor table, a large soup plate, filled with the plants and some bright wood-moss to cover the earth and the edge of the plate, then cover with the glass, is very pretty.

For a bay window or a niche in a shaded parlor, what more lovely ornament than a hanging fernery filled with bright green foliage can be imagined.

In the first place put a layer of charecoal in the bottom of the zinc pan—the pan should be three or four inches deep—have a quantity of fine green wood-moss on hand, and cover all the edges of soil with it, mix good leaf mould with about one-third sand, and press the plants firmly down as you place them in.

Do not plant too near together—those growing the largest should be placed near the center, unless some little fancy design is intended—a grotto, lake, bridge, mossy bank, with statuary or deer can be added with fine effect.

First, get a few choice ferns from the greenhouse, among them the gold and silver fern and the beautiful Maiden-hair, then add our native ferns, but do not expect *them* to retain their beauty during the severe cold of winter, for they must have a season of rest from December until the middle of February. At that time they begin to send up their graceful fronds, and it is a great pleasure to watch their progress upwards, as they often grow two inches in a night. We have but one evergreen fern that I know of, and that is a pretty dwarf one, that grows in great abundance around Devil's lake. I believe there are two or three other kinds growing in the northern part of the State among the pines, but they are seldom seen here. Lycopodiums, Bignonia in variety, Achyranthes, Ficus stipulata, Tradescantia zebrina, Coleus, Cranberry, Sagittaria, Hepatica, Trailing Arbutus and many other plants can be grown finely in the Wardian case. A climbing fern is very beautiful placed in a corner and allowed full liberty to grow as it pleases. Scotch Heath succeeds well, grown under glass.

Arrange the surface as your taste would dictate; some prefer little mounds, and others prefer it level; cover the soil with the prettiest variety of wood-mosses that can be found. We can find in this vicinity at least twenty green and brown mosses (but do not use liehens, as they mould under glass). If spots of mould appear on the moss, give air for an hour or two a few times, and they will soon be bright and velvety. Water freely, and if, in the morning, the water stands in great beads upon the inside of the case, it is sufficient. Do not water again for six months or longer. Let the sun shine upon it for a short time each day, unless the sun is very hot.

It is not necessary to go to the greenhouse to get plants to stock our cases, unless we prefer to do so; for if we will traverse our woods and marshes, with botanical eyes, we shall find there are many rare and beautiful flowers, ferns and vines that fill conservatories for thousands to admire, on another continent.

I hope that we shall see the number of ferneries largely multiplied, for no little outlay of money can gratify one alive to the beauties of nature more than this little drop of sunshine, which is a perpetual reminder of green woods and running streams, and of Him who is the maker of this world, and of His wonderful works.

Button-hole Bouquets and Coat Flowers.

BUT few seem to understand that there is any difference between a button-hole bouquet and a coat flower; yet there is, and a very great difference too, the flower being, as the word signifies, a single bloom, whereas a bouquet means a number of flowers arranged according to taste. Many papers have appeared in different horticultural periodicals on the arrangement of cut flowers, and yet, with few exceptions, they have excluded button-hole bouquets, probably because, being small, people imagine that they must necessarily be easy to make. Just let them try, and I do not hesitate to say that they will find themselves much mistaken, as no combination of flowers requires to be put together with more taste, or to be more lightly done, than a properly made button-hole bouquet. Flowers selected for this purpose should always be good, particularly those for mounting singly, which should, in fact, be specimens of whatever kind is chosen. Ferns I always like to see in such bouquets, and also along with coat flowers, provided these are stove or greenhouse kinds; but hardy flowers I like best mounted with their own foliage alone. Nearly all flowers for bouquets of any sort should be wired; indeed, many could not be used for that purpose at all, were they not mounted on wire, as, for example, the pips of white Hyacinths, which, in winter, are among the most useful flowers which we have. There are, however, other ways of mounting flowers besides wiring them. Let us take, for example, a Gardenia. The center petals of this flower—indeed all except the outside row—are very even and lovely; but their beauty is sometimes marred by the outer ones, which look twisted. Now to remedy this evil, and to make them look all even, proceed as follows: Take a common Laurel leaf, and cut a piece out of it about an inch square; with a pair of scissors trim round the corners, so as to almost make it circular; then cut a cross in the middle, and down through that push the stem of the Gardenia until the flower and Laurel leaf are pressed tightly together; then hold it upside down, and through the stem, close to the leaf, pass a "stub" wire (which will keep the leaf in its place); bend the ends down and fasten them together with a little binding wire so as to form a stem. The petals of the flower can be then arranged out in their proper places, and the piece of Laurel leaf being so tight to the flower that they will remain wherever they are placed. There is also another point to which I would wish to direct attention, and that is, the foundation of the button-hole bouquets, which is generally a piece of Maiden-hair Fern; but that is not stiff enough in itself to form a good support for the other flowers. To remedy this, the best plan is to back the Fern with a small Camellia leaf, wired, which will keep the whole bouquet firm and in shape. The following arrangement is that most often seen: at the back is a spray of Fern; next some long light flower, so as to form a kind of point or finish at the top; then a Camellia bud, or Rose, or some such flower, and then Maiden-hair Fern and whatever other small flowers are at hand. I made one a short time ago of a half-open white Camellia bud, spray of Hoteia (*Spiraea*) *japonica*, and a few pips of white Hyacinth, mixed with a little Maiden-hair, and many remarked that it was very light and elegant looking. That which took the first prize at the Royal Horticultural Society's Show at Birmingham, last summer, was composed of a yellow Rose-bud, mounted with blue Forget-me-Not, a pip of *Kalosanthes coccinea*, and one of *Bouvardia*. I have seen one made of the Lily of

the Valley, a blush-colored Rose bud, and the same shade of Hyacinth pips, with a little Fern worked through it, which was a very neat-looking little bouquet; another consisted of a spray of Lily of the Valley, a yellow Rose bud, and a few pips of rich purple Cineraria, which came out well against the deep color of the Maréchal Niel bud. I could give descriptions of many others, but think that those which I have mentioned will suffice to show the best shape and style in which such bouquets should be made.—A. H., *in the Garden.*

The Sermon of the Flowers.

[Extract from an address on Ornamentation of Grounds, delivered before Ill. State Horticultural Society,
by Dr. J. M. Gregory.]

FORTUNATELY in our land adornment, the number of available objects in which this element of beauty resides, is almost endless. The land itself, smoothed into the level lawn, swelling into soft undulation, or cut into terraces in a thousand combinations, flecked with shadows or sleeping in the pale or ruddy light is perpetually beautiful. The myriad forms of plant life, from the delicate mosses that deck the rugged rock as if to help it too, to look beautiful, and the little grasses, making in their very multitude the royal holiday attire of our good mother Earth, to the stately pine and the grand oak, uniting in their outlines and foliage every conceivable line of grace, and mingling every hue and tint of beautiful colors. All these offer ready to our hand a practical infinitude of beauty for our landscape work.

And the flowers, those reminiscences of Eden and prophecies of Heaven, the splendid children of the sun and the jewelry of the soil, what shall I say of them? Beautiful in form, beautiful in color, beautiful in arrangement, infinite in variety, endless in profusion, decking without reluctance the poor man's cot, brightening without pride the rich man's home, blooming with wild content in lonely forest glades and on the unvisited mountain sides, blazing without ambition in the public parks, shedding their fragrance without anxiousness in the chamber of sickness, cheering without reproach the poor wretch in prison cell, blushing in the hair of virtuous beauty and shedding without blush their beautiful light on the brow of her fallen sister, sleeping in the cradle with the innocent life of infancy, and blooming still in the coffin with the cold clay that remains after that life is spent, scattering their prophetie bloom through orchards and fields where robust industry prepares its victories, and lighting up the graveyards with their still undismayed promises, scorning no surroundings however humble or however sinful, flinging beauty in the wild wantonness of infinite abundance on the most precious and the most worthless things, they are God's incarnated smiles shed forth with a love that frightens our poor justice out of its wits, and with an infinite justice that puts our uttermost love to the blush, teaching us a theology better than the creeds, and a science better than the schools; at once mocking and stimulating our acts, kissing us when we fall, but refusing to let us lie quiet in our prostration, and perpetually urging upon the great heart of humanity, by their myriad and unending illustrations, the lesson of infinite trust in that divine Fatherhood which gives their splendor to the lilies and tells us that "Solomon in all his glory was not arrayed like one of these."

THE ESTERN AGRICULTURIST

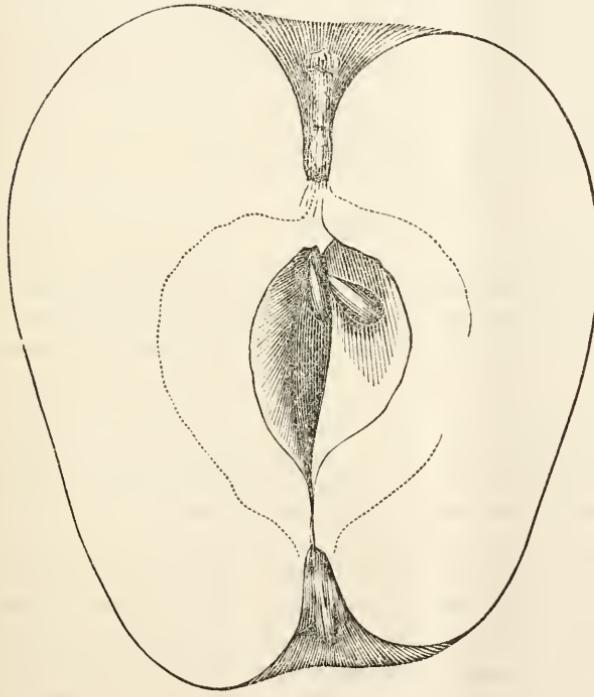
MARK MILLER, EDITOR
H.W. THOMAS, DES.
DES MOINES, IOWA
E.S. SEARS, SC.

The Chenango Strawberry Apple.

WE herewith present an illustration of the Chenango Strawberry Apple. Our attention was called to this apple in the summer of 1869, by Mr. J. H. Givins, whose orchard is near this city, for recognition. We knew it not, nor any one else hereabouts.

We took specimens to the meeting of the American Pomological Society, at Philadelphia. It was not recognized there by either Warder or Elliott, but Mr. Barry pronounced it the Chenango Strawberry. Mr. Seth E. Hall, of Franklinville, N. J., who was present, said he knew the apple—that it originated near his old home, in Chenango county, N. Y.

We have paid a visit to Mr. G.'s orchard, regular, at the season of maturity, and have annually found both tree and fruit without a blemish. The tree itself is a model, hardy, a rampant grower, and produces a heavy crop of fruit annually;



skin thin, of a yellowish cast, smooth and glossy, splashed and streaked with carmine red; flesh white, exceedingly tender, and fine grained, juicy; flavor mild sub-acid. Great beauty and fine flavor make this apple a favorite for the dessert wherever known. This apple should be grown only for family use and a near market. Its season is short (early September), and the fruit perishable, on account of its great delicacy of skin and texture; should be taken from the tree as soon as ripe.

Small Fruits—The Borer, Etc.

BY A. K. CAMPBELL, NEWTON, IOWA.

ED. WESTERN HORTICULTURIST: There is a great amount of careless writing on the subject of fruit raising, which is causing to the people of the State great vexation and irreparable loss. Our Horticultural reports are full of it. For examples: The Kittatinny Blackberry is recommended—my experience, and the experience of all others I can hear from is, that it is worthless, like all other fancy varieties; our own native being the only kind worth cultivating. I would give considerable to know that I am mistaken on this point, but have no hope that I am.

Again: the Early Richmond Cherry is almost the only one recommended. With us, within the last five years, the Richmond has missed two crops from frost, and one was almost ruined by wet, while I have English Morellos which have borne five years in succession *full crops* of a finer cherry, we think. It blooms later than the Richmond and escapes the frost. Is there then any comparison as to the value of the two? We need a few Richmonds for early fruit, that is all.

Again: the Lombard Plum is highly recommended. It has never borne but one good crop in this section. It certainly fails to meet its reputation, and we need to be looking out for something better.

Certainly more caution is needed in recommending fruits for cultivation. In full view of this fact I give the following items concerning small fruits:

Raspberries.

They should be raised by everybody in Iowa owning so much as a garden. I make those I raise stand five tests, to wit:

1st, As to hardiness; 2d, As to amount of yield; 3d, As to ease of picking; 4th, As to care required; 5th, As to size and flavor. The varieties I cultivate are—Philadelphia, Mammoth Cluster, Doolittle, Purple Cane, Ohio Everbearing, and Ellisdale.

With us the Philadelphia stands all the tests, the flavor, however, not being so generally liked as that of the Purple Cane.

Next in order come the Doolittle, Black Cap and Mammoth Cluster, so easy to pick, yielding great crops, easy to cultivate, but more easily injured by wind and winter than the Philadelphia.

The genuine Purple Cane is worthless as a market berry, but every family should have a row to mix with the others for table use. It bears great crops but it costs twice as much to pick a quart as it does to pick a quart of Black Caps, and is such a rampant grower that it takes an extra amount of labor to take care of the bush. Many seedlings of this variety, some very good and some very poor are scattered over the country.

I have cultivated the Ellisdale five years, and have decided it is one of the best; a very vigorous grower, yields full crops of rather soft fruit, endures bad treatment better than any other kind I have tried.

I rank these varieties as follows:

1st, Philadelphia for all qualities—though it propagates from sprouts, it is very easily taken care of.

2d, Mammoth Cluster and Doolittle. These excel as a market berry, are firm and easily picked. Are sometimes cut down to half or one-third of a crop by winter-killing, or some unknown cause.

3d, Ohio Overbearing. This variety I am still testing. So far, it gives me great satisfaction. I may conclude it one of the very best.

4th, The Purple Cane and Ellisdale.

I am testing other varieties, but concerning them have as yet nothing to say. I have discarded the Clark as of no account here, and the Davison Thornless as too tender.

I use no supports, making summer pruning give the bush such form that it will support itself. I have gathered over a gallon from a single bush. Some fruit writers say they will sometimes yield two gallons. As I have not reached that point I have concluded I must manure heavier. I aim to keep the ground perfectly clean with bright and sharp hoes. I have adopted the plan of planting two feet apart in rows—rows eight to ten feet apart. This makes the bushes support one another, and gives plenty of root room, light, air and sunshine.

Whatever may be said of Iowa as a fruit country, we can stick a peg down here and say, that no country can excel us in raising this delicious fruit; yet even here they must have good care or they will not give satisfaction. It must be intelligent care, too. The three main points in their culture are *good plants* to start with; ground deeply plowed and well manured; and weeds kept entirely off the ground, then prune as best you know how.

I give these items as the result of six years experience and experimenting. I am still learning much as to the mode of culture and value of varieties each year.

Your correspondent refers to my mode of treating apple tree borers. I have for five years practiced scraping away the earth from around the trunks of the trees, about the middle of June or first of July, down two or three inches and scraping off the bark, restoring the earth in the fall. None of the trees so treated have had borers in, while some not so treated have been badly injured before I had noticed anything wrong with them.

I am not a professional fruit raiser, only cultivate my four-acre garden as a relaxation from the severer labors of the law, yet I will not yield the palm to any of our professional fruit men in the matter of an intense interest in the subject, that I may learn and tell how best to raise the choice fruits of the world about our Iowa homes. Let me add this word to close. One acre, well prepared, planted and tended, will raise more fruit than four acres badly managed; and not one in five of your readers will believe me when I say so.

REMARKS—We fully concur with our correspondent in the estimation he puts upon the English Morello. Those who have planted the Early Richmond, for market—as has been the case generally—mainly to the exclusion of the Morello, will find it a great oversight. Of the two, English Morello is the most fruitful and reliable for an annual crop, and what is of no small importance to the producer, bears a higher price in the market by fifty per cent. The fruit is larger, and though a little astringent, takes precedence for canning with those who know it best. It is in

season after the Early Richmond is nearly, if not quite out of the market. We have not failed for the last three or four years past to realize an advance of forty to sixty per cent. on the closing wholesale market price of the Richmond.

The Wilder and other Strawberries.

ED. WESTERN HORTICULTURIST: I see the Wilder Strawberry favorably spoken of, in a late number of the HORTICULTURIST, as coming from the South. Let me state that, here, it is just going to be what was claimed for it. The hot, dry summers, here, are extremely hard on the strawberry plants, but the Wilder stands it nobly. It is, in all respects, a superb berry, and quite late. In picking, it seemed to me my box got full easier than common, and these all good sized to large berries. Seldom is a new strawberry first illustrated as modestly as this variety was. I have had berries double the size of the illustration. With Nicanor, Seth Boyden, Wilder, Russell, Kentucky, and such like, there need be no complaints of small or sour strawberries.

The Nicanor, when well grown in stools, is a superb berry—to my taste, one of the very best in quality. Albany is almost burned out with me, along side of Nicanor, Green Prolific, Seth Boyden, Russell and Wilder, all the others flourishing like a "Green Bay tree."

I must not omit mentioning that Green Prolific has always been fine, ever since I got it, with me; but wait until Monarch of the West, Star of the West, Cat and Jack, and some more of the new ones, come out, and then we will beat even these worthies. One rain in six weeks made things look quite dreary here, but last night and this day we are getting fine showers.

Bluffton, Mo.

SAMUEL MILLER.

The Cracking and Warfield.

P. S.—I have two varieties of apple, among the finest growing trees in my nursery, Cracking and Warfield; please describe them, I wish to plant in orchard, but do not know their quality or time of ripening.

REMARKS.—Cracking is a fine apple, both for eating from the hand and for cooking. The tree has fruited well about here, though a little tender. We can give no better description than the following, from Downing :

Fruit fair, large, roundish, slightly flattened, inclining to conic, angular. Skin fair, fine yellow, with a slight tinge of red, thinly sprinkled with large green dots. Stem short, in a rather deep cavity. Calyx closed in a corrugated basin. Flesh yellowish white, crisp, tender, juicy, and excellent. October to January. The tree is a vigorous grower and very productive.

The Warfield, in size, is above medium, and in appearance resembles Maiden's Blush. In quality second to third rate. The tree is said to be a strong grower, hardy, and an early bearer.

Hussman on Summer Pruning the Vine.

WITHOUT proper and judicious summer pruning it is impossible to prune judiciously in the fall. If you have allowed six or eight canes to grow in summer where you need but two or three, none of them will be fit to bear a full crop, nor be properly developed. We prune longer in the fall than the majority of our vintners, which gives a double advantage; should the frost of winter have injured or killed any of the first buds, we still have enough left; and should this not be the case, we still have our choice to rub off all imperfect shoots; to reduce the number of branches at the first pinching, and thus retain only strong canes for next year's fruiting, and have only large, well developed bunches.

But to secure these advantages, we have certain rules, which we follow strictly. We are glad to see that the attention of the grape growers of the country is thoroughly aroused to the importance of this subject, and that the old practice of cutting and slashing the young growth of July and August is generally discredited. It has murdered more promising vineyards than any other practice. But the people are apt to run into extremes, and many are now advocating the "let alone" doctrine. We think both are wrong, and that the true course to steer is in the middle.

1. Perform the operation early. Do it as soon as the shoots are six inches long. At this time you can overlook your vine much easier. Every young shoot is soft and pliable. You do not rob the vine of a quantity of foliage it cannot spare (as the leaves are the lungs of the plant and elevators of the sap). You can do three times the work that you can perform a week later, when the shoots have become hardened and intertwined by their tendrils. Remember that the knife should have nothing to do with summer pruning. Your thumb and finger should perform all the work, and they can do it easily if it is done early.

2. Perform it thoroughly and systematically. Select the shoots you intend for bearing wood next year. These are left unchecked; but do not leave more than you really need. Remember that each part of the vine should be thoroughly ventilated, and if you crowd it too much, none of the canes will ripen their wood as thoroughly nor be as vigorous as when each has room, air and light. Having selected these, commence at the bottom of the vine, rubbing off all the superfluous shoots, and all which appear weak or imperfect. Then go over each arm or part of the vine, pinching every fruit bearing branch above the last bunch of grapes, or, if this should look weak or imperfect, remove it and pinch back to the first perfectly developed bunch. Should the bud have pushed out two or three shoots, it will generally be advisable to leave the strongest, and remove the balance. Do not think that you can do part of it a little later, but be unsparing in taking away what you intend to take this time. Destroy all the caterpillars, and all the insects you find feeding on the vines, the steel blue beetle, who will eat into the buds. But protect the lady bug, mantis, and all the friends of the vine.

We come now to the second stage of the summer pruning. After the first pinching, the dormant buds in the axils of the leaves, on fruit-bearing shoots, will each push out a lateral shoot, opposite the young bunches. Our second operation consists in pinching off these laterals back to one leaf as soon as we get hold of the shoot above the first leaf, so that we get a young and vigorous leaf additional, opposite to

each bunch of grapes. These serve as elevators of sap, and also an excellent protection and shade to the fruit. Remember our aim is not to rob the plant of its foliage, but to make two leaves grow where there was but one before, and at a place where they are of more benefit to the fruit. By our method, our rows of vines have the appearance of leafy walls, each bunch of the fruit properly shaded, and yet each part of the vine is properly ventilated. We come now to another one of those accidental discoveries, which has proved of great use to us in the management of the Concord, Herbemont, Taylor, etc. In the summer of 1862, when a piece of Concord, planted in 1861, was growing rapidly, a severe hailstorm cut up the young shoots, completely defoliating them, and breaking the tender and succulent shoots at a height of about two feet. The vines were growing rapidly, and the dormant buds in the axils of the leaves immediately pushed out laterals, which made fair-sized canes. In the following fall when we commenced to prune we found from three to five of these strong laterals on each cane, and accordingly shortened them from three to five and six buds each. On these laterals we raised as fine a crop of grapes as we ever saw—certainly much finer than we had ever before raised on the strong canes; and we have since learned to imitate hailstorms by pinching the leaders of young shoots when they have grown, say two feet, forcing out the laterals and growing out fruit on the latter, thus meeting with another illustration of the old proverb, "It is an ill wind that blows nobody any good."

After the sound pinching of the fruit-bearing branches, as described above, the laterals will generally start once more, and we pinch the young growth again to one leaf, thus giving each lateral two well developed leaves. The whole course should be completed about the middle of June here, and whatever grows hereafter may be left. In closing, let us glance at the objects we have in view:

1. To keep the vine within proper bounds, so that it is at all times under the control of the vintner, without weakening its constitution by robbing it of a great amount of foliage.
2. Judicious thinning of the fruit at a time when no vigor has been expended in its development.
3. Developing strong, healthy foliage, by forcing the growth of the laterals and having two young, healthy leaves opposite each bunch, which will shade the fruit and serve as conductors of the sap to the fruit.
4. Growing vigorous canes for next year's fruiting and no more, thereby making them stronger; as every part of the vine is accessible to light and air, the wood will ripen better and more uniformly.
5. Destruction of noxious insects. As the vintner has to look over each shoot of the vine, this is done more thoroughly and systematically than by any other process.

SOIL FOR PEARS.—E. Manning, of Harrisburg, Ohio, writes to the *Gardeners' Monthly* on this subject: Beurre Clairgeau was unthrifty on a rich soil; on high, thin soil it was thrifty and excellent. Anjou succeeded well on rich soil, and failed on thin soil. Doyenne du Comice did best on thin soil; Golden Beurre of Bilboa just the reverse. These results were all on his own ground; in other regions they might have been different.

Grape Culture.

A CORRESPONDENT, whose locality is some three miles above Washington, on the Potomac river, communicates the following to the Department of Agriculture. One thousand vines were planted in the spring of 1866—one-half Concord, and the balance other sorts:

"I procured first class vines, and planted them with great care, as follows: Selected ground sloping to the southeast and east; plowed it from eight to ten inches deep, harrowed it fine, and planted in rows eight feet apart both ways; set an eight-foot stake at each plant, and mixed with the soil, about the roots, one quart of ground bone and a shovelful of old, well-decomposed stable-manure; pruned the roots, also cut the top or vine back to three or four buds; and when the buds had grown from one to two inches, rubbed off all but one, the strongest; trained that to the stake by tying, and pinched off at second leaf all lateral shoots, thus concentrating the growth in the one cane; gave them clean cultivation.

"The next February, when there was no frost in the wood, I cut it back to three or four buds of that year's growth, and let only two buds grow; trained and managed these two canes the same as the one the year before. During the following February I cut the two canes back to three and a half feet long, removed the stakes, and built a trellis over each row, in the following manner: I set eight-foot cedar posts half way between each vine, commencing with one set four feet from each end of the rows, and nailed to these posts white-pine strips full one inch thick by four inches wide, the first one foot above the ground, and the second four feet above that from lower edge to upper edge; then nailed to these strips good white-pine laths, nine inches apart. I then tied the canes, on the two-arm system, to the lower bar; trained and tied the shoots from these canes to the trellis.

"Each shoot bore this year from three to four bunches of grapes; pinched each shoot off at from three to four leaves above the last bunch of grapes, and as it grew again, pinched it off at second leaf; and so on to top of trellis. When the clusters ripened, I was well repaid by the beautiful sight they presented. Both bunches and grapes were very large and perfectly formed. I readily sold the entire crop at fifteen cents per pound on the vine. Some of the vines yielded fifteen pounds each, and as beautiful and perfect as those grown under glass. My success attracted attention. Many enterprising farmers and citizens of Washington came to see my vineyard, and pronounced it the finest, as to growth of wood, foliage and grapes, and as to training, trellis, etc., they had ever seen. The Concords surpassed all other varieties in all the desirable qualities. Having occasion, several weeks after my grapes had been disposed of, to visit Central New York, I found many Concords grown there just in the market, but they were much inferior in point of perfect maturity, flavor and sweetness.

"The crop of last season was the fifth I have grown, and was the largest; and although the average price realized was but about half that received for the first crop, it amounted to over \$800 per acre, or about \$700 net. I am annually enlarging my vineyard, which now comprises about six acres; expect to enlarge it to ten next fall. The soil and sub-soil prove to be perfectly adapted to the growth of the grape, being composed of about equal parts of sand, loam, and clay, and containing considerable

quantities of mica, with a sub-soil of rotten rock, into which the grape-roots penetrate several feet. It is also just porous enough to absorb the rains; consequently no draining is required."

Double Balsams.

ED. WESTERN HORTICULTURIST: Whilst growing a varied collection of flowering plants, I yet have some that succeed so well as to become specialties. One of these is the *Double Balsam*—not the straggling, half-grown looking things often seen in many front yards, but strong plants, that spread three feet, and produce large, double flowers big as roses—some three inches across, and of varied hues and shades; very showy and brilliant when grown in quantity. Some of the newer striped and blotched varieties are simply magnificent; the *Solferino* variety cannot be excelled for beauty and delicacy of coloring. I want them in quantity, too; must have a hundred or more; half a dozen plants won't satisfy. Plant the seeds thickly, and thin out undesirable colors when the flowers appear; eighteen inches space will allow the plant to spread itself. Some visitors say, "O how do you manage to have such splendid Balsams? What mystery attends their cultivation?" No mystery at all; buy seed of good varieties, plant in well enriched soil, keep down weeds, and give abundance of water in dry weather if large flowers and plenty of them are wanted. If you have leisure time, trim a portion of the plants to a single stalk, as soon as side branches appear, and see what a wealth of flowers you will have—almost hiding the plant from sight. Pull off fading flowers unless seeds are wanted. Although the flowers have such short stems, yet they make a beautiful appearance arranged on a flat dish. If you have no fern leaves or other delicate green, take young carrot tops and place them over a large dish; arrange the balsam flowers thickly over these, and you will have a very "thing of beauty."

R. L. BLAIR.

Des Moines, Iowa.

Soap Wash for Fruit Trees.

THE beneficial influence of a weak alkali wash upon the bark of fruit trees is of long standing acknowledgment. Its action is in expansion of the pores, while at the same time it is destructive of all insect life, sporadic or otherwise. Writers or theorists differ as to the best time to apply it: but we have always found that if good common sense be used in preparing it, the time of application is always good. And now for the preparation. If you use purchased potash, reduce it so that you can bear your finger in it half a minute or more without a tingling or sore sensation. If you can obtain good soft soap from the refuse grease and lye of ashes saved up dry, then take it and reduce it (the soap) down, not to a suds, but so that it will not beropy when used by a soft whitewash brush. Use it freely, and it matters not materially just when, but say now, and any time most convenient until 1st of July; but after that time it is perhaps better to wait till the next year.—*American Farm Journal.*



Editorial Notes.

Horticulture. What's in a name?

We have often met persons so foolish as to think that a horticultural journal was not as good as an agricultural one, and somehow have gained the idea that horticulture (because so hard a word) was of no practical interest to any but few of scientific tastes. Speak to them of gardening. Ah, now they understand us—yes, they appreciate that, as it is the best and most tasteful part of a country gentleman's life; but mention to them horticulture, and they do not quite understand. It is too hard a word; they do not know what it means; something not very pleasant or popular, "dry, ancient, antiquated, fit for fussy old men—musty reading." Such are the impressions the popular mind has of all things named horticultural—such unfavorable ideas created by the use of one hard word. We suppose we could have doubled our circulation three or four times if our journal had been plainly named—some such title as "*The Cottage Gardener and Flower Lover's Companion*," instead of plain "*Horticulturist*," which, though indefinite, expresses it all. The people seem to demand plain titles which express the character of a journal, without giving them the necessity of studying it out. Hundreds take an agricultural journal, and rather like the horticultural part of it; but a journal strictly devoted to horticulture is not encouraged—and some even think it is quite a different thing, not connected with agriculture.

A New Strawberry.

Dr. F. M. Hexamer, of New Castle, N. Y., lately exhibited in our office, a new seedling strawberry, named the Early Dutchess. It originated with Mr. Barnes, of Poughkeepsie, N. Y., the same who introduced the Barnes Mammoth.

The Early Dutchess is three days earlier than the Burrs New Pine or Downer, and six days ahead of the Wilson. The berry is large, irregular surface, has bright color, and quality is sweet, good, juicy, of large size and unusually uniform. It seems to be an excellent family fruit, and though not of high quality, yet has that pleasant taste which will lead many to appreciate it who dislike the acidity of the Wilson.

Peat Ashes as a Fertilizer.

M. Lebœuf, a large cultivator of asparagus and strawberries of Argenteuil, France, has recently obtained some advantageous results from peat ashes used as a fertilizer. He filled three pots with the substance, without any other admixture, and planted in one oats, in another wheat, and in the third strawberry plants. Leaving them through the winter without attention, germination took place. The wheat and oats sprouted and bore large and heavy grains—the stalks attaining for the wheat at a height of four feet five inches, and for the oats three feet six inches. The strawberries were unusually vigorous. M. Lebœuf has repeated the experiments several times, with uniform success.

A Splendid Azalea.

In the greenhouse of Prof. Chas. S. Sargent, at Brookline, Mass., there was in bloom the latter part of May, an Azalea of mammoth proportions, the largest plant in his collection, and named The Decorah. It measured 16 feet in circumference, and its dome, 5 feet high, was covered with over 3,000 magnificent rose-colored blossoms. There are 250 others of magnificent size and colors, and when in the glory of full bloom make a fairy-like scene.

Analysis of Asparagus.

In providing manures and special fertilizers for the asparagus, very few realize how greatly it is benefited by the application of potash. The following analysis will give some new ideas to those who want to know what the asparagus plant feeds upon. It is an analysis of the ashes, and not the fresh or air dry matter: Potash, 20.48; soda, 2.89; lime, 13.15; magnesia, 3.24; peroxide of iron, 4.22; silica, 9.99; sulphuric acid, 5.72; phosphoric, 10.03; carbonic, 25.71; chlorine, 3.21; loss, 1.35—100.

Standard Fruit Measures.

We have long needed standard measures for selling our fruit. A basket has never meant any thing positive, and the artful way they have been filled by raised bottoms, etc., have been sources of much fraud to buyers. The Fruit Packers Board of Trade at Baltimore, Md., whose members purchase large quantities of peaches and tomatoes, recently adopted a standard measure, as follows: That the standard bushel for peaches shall be a box 9 inches deep, 14 inches wide, and $22\frac{1}{2}$ inches long, in the clear, with half-inch partition—that the standard half bushel for tomatoes shall be a basket 10 inches deep, $10\frac{1}{2}$ inches across the bottom, and 15 inches across the top—and that the barrel for measuring peas shall hold not less than two and a half standard bushels.

Raisins in Utah.

Even Utah aspires to the same honors as California in producing raisins from grapes. They have been grown at St. George, Southern Utah, by Elder Bentley, of the Mormon church, who says they can be produced for as low a price as the foreign raisins can be imported. They are from the *Fiber Zagos*, a Hungarian grape, which makes an excellent raisin, and equal, if not superior to any that find their way to the American market.

A Ladies' Horticultural Society.

Why not? good idea! making flowers the leading feature of the exhibition. A successful society of this nature exists already in Pennsylvania, entitled the Ladies' Floricultural and Horticultural Society of Montgomery County, Penn. During the month of June it held its spring fair at Ambler Park, and made an attractive display of flowers and plants, and awarded premiums to the amount of \$400. The rivalry was good humored and spirited.

A Rampant Wisteria.

The foreign journals speak of a beautiful Wisteria—recently in full bloom—covering the front of a well known hotel near Slough, in England, and running around each end for some distance, making altogether a length of about 150 feet. It was planted against a strong iron support of the veranda, which support long since lifted bodily from the ground, and broke in pieces with the seeming ease with which a man would break a lucifer match. A Laburnum grows against the building on one flank, and the contrast between the clusters of blue and yellow flowers is declared to be "perfectly charming."

Canned Fruit.

There must be a reform in putting up American canned fruit, or the foreign market, now opening with fine prospects and encouraging demand for really good articles, will shut down most rigidly against American brands. Immense amounts of poor trash are manufactured yearly, and vended by unscrupulous canners. We have opened several of the cans of peaches put up by these parties, and behold a single

peach or two swimming in a sea of juice. Good canners should fill the can full of fruit first, then pour in juice to fill up. Dishonest canners use poor, unripe fruit, so hard that it would realize no sale in market, and think that by cooking, it may be made to answer. In this way canned peaches can be made and sold for \$1.75 per dozen. Good, well filled cans of selected peaches, cannot be well made for less than \$3 to \$4 per dozen, each can holding one to two quarts. Great damage is done to the business of canning fruit by dishonest packers. It is a business of immense value to our fruit growers, as it opens an avenue for new markets, and relieves the market of its surplus fruits.

A trade journal of this city publishes a letter from a firm in Liverpool, stating that large quantities of canned peaches could "be sold abroad if they were put up honestly; but there have been heavy consignments of unripe fruit, which nobody could use, and, as a consequence, the demand has fallen off, and it will take a long time to recover from the discredit." The same is said of oysters. Our canned peas and beans do not sell, because they are so inferior to those put up by the French. Tomatoes and sweet corn do not sell at all in England, nor are likely to, for the reason that no taste has been acquired for them, and, perhaps, the climate is unfavorable.

Otto of Roses.

The Attar, or Otto of Roses, most precious of all perfumes, is made almost entirely among the Balkan mountains. There are at least one hundred and fifty places where its preparation is carried on, the most important of all being Kizanlick. The roses are planted in rows, like vines. The flowers are gathered in May, and with the green calyx leaves attached, are subject to distillation. Five thousand pounds of roses yield one pound of oil.

Restoration of Forests.

France has been the scene of greatest success in replanting vacant ground with trees. The reign of Napoleon III, will ever bear a memorable name for the decided encouragement which he gave to this branch of agriculture. An interesting experiment was begun by his direction in the department of the Hautes Alpes, to resotre lands that were desolated by the removal of the original forests. For years the country was destitute, agriculture declined, village after village became deserted, until the department had lost 11,000 of its population. The peasantry opposed with the greatest violence any attempt at the replacement of the forests, and the government was obliged at last to force them to returf the barren districts. The result is said to be most satisfactory: the covering of sod has retained the rain, instead of allowing it to run off in torrents, and the desolate, barren districts of the last few years are reassuming the luxuriant vegetation with which they were clothed in olden times.

This subject is also beginning to be ventilated in England, and they are in a great state of mind. In former days half England was a forest, but by degrees acre after acre has been disforested. Even the limits of Windsor Forest, which early in the century formed a circuit of fifty-six miles, have been greatly curtailed; and the New Forest, where Rufus fell, in Hampshire, is the only considerable one left. Near London is Epping Forest, which fifty years ago was very extensive, but has gradually been filehd away by neigboring property owners until there are only some three thousand acres left. Lately, however, the Londoners have become very much in earnest about allowing no further encroachment, and even insisting upon reparation, and as the corporation of London, with its long purse and law officers, has taken the matter up, vigorously supported by the press, there seems a chance that the venerable forest, which contains magnificent old oaks, will be preserved.

The forest lands of the crown are somehow very badly managed, and yield a miserable return. It is computed that if the New Forest, which lies in a lovely district on the Southampton water, were sold in lots, it would realize \$10,000,000. The scenery is very picturesque, not merely thick woods, but broad expanses of velvety turf overshadowed by splendid single trees; fine groves, glades and vistas, delightful for summer riding.

Floral Notes.

Planting Slips.

The Gazette des Campagnes recommends to dip the extremities of the slip in collodion, containing twice as much cotton as the ordinary material used in photography. Let the first coat dry and then dip again. After planting the slip, the development of the roots will take place very promptly. This method is said to be particularly efficacious in woody slips, Geranium, Fuchsia and similar plants.

Fancy Prices for Plants.

At a recent sale of rare plants by Messrs. Backhouse, of York, England, the *Country Gentleman* says: "A mass of the *Oncidium tigrinum*, consisting of about thirty bulbs, sold for \$150. Smaller plants or masses brought \$15 to \$60. A strong plant of *Oncidium macranthum* was sold for \$45, and other plants, all of the same species, from \$17 to \$37. Many other plants, mostly rare Orchids, brought prices nearly as high."

"The First Fuchsia."

Dr. James Eights, who accompanied Wilkes in his exploring expedition to the South Seas in 1838, told me that when on the Island of Juan Fernandez he was pleased with the exceeding beauty of the fuchsia, there growing wild, and that he brought the seed to New York, and from it grew the first plants that were known here.

Humboldt, in his *Cosmos*, makes some allusion to the doctor, in connection with his scientific researches in South America, and about a dozen years ago Parsons added a new flower to his catalogue which Dr. Eights discovered in the Southern States and for which he received the munificent sum of fifty dollars.

To me, in all the flora of the North there is nothing prettier than our native fuchsia—the Cellandine whose golden "drops" hang over meadow brooks and contrast harmoniously with the surroundings.—*Mrs. N. Orr, in Rural New Yorker.*

Notes from the Pines.

Spring Foliage.—There is much in the varied hues of the just developing leaves to attract the observer who has an eye for the minor beauties of nature. The expanding leaves of the pear and those of the ash-leaved maple are both of a tender green, but quite unlike, and both are quite different from the near-by *Virgilia* (more properly *Cladraspis*). Then just beyond is a Weeping Poplar, the young leaves of which are of a brownish green, *foncé* the French would say, as dark as the neighboring Gingko tree is lively. An artist would describe the foliage of this last-named tree as "gamboge green." Then a little nearer the house is a golden glow from the young leaves of what the nurserymen call *Spiraea aurea*, but which is only a bright-leaved variety of the well-known Nine-bark (*Spiraea opulifolia*). A little more at the right is the charming purple-leaved variety of the common Barberry, and still farther along are the Purple Hazel and Purple Bush. These last-named are varieties cultivated for their colored foliage, but there is enough in the different shades of the young leaves of trees in their normal condition to make the effects of spring foliage worthy the study of the landscape gardener. I have alluded to the

Weeping Poplar, which is one of the most desirable of lawn trees. Its branches are most decidedly pendulous. It comes out very early, the leaves hold on late, and all through the season its quivering foliage upon the drooping branches makes it a most enjoyable tree. This and similar weeping trees increase in height very slowly, and they are grafted upon upright stocks of some kind. The nurserymen graft all such trees too low. My poplar was grafted at about eight feet, but this is not high enough; the branches already sweep the ground. I am growing a Lombardy Poplar to a straight stem, and when it gets about fifteen feet or so high I shall graft it with the weeping variety, and hope for a tree worth having. I saw to-day that a neighbor had planted near his house a Weeping Ash, grafted not above six feet high. This

will always be a nuisance. Among the many things that dealers abroad praise "within an inch of their lives" it is gratifying to find now and then one that meets the expectations these descriptions have excited. One case of this kind is the

Double Crimson Thorn.—This, if I mistake not, was sent out by Wm. Paul. At all events, I procured one five years ago of Ellwanger & Barry, who are sure to have all novelties of this kind. This is the first year it has consented to bloom. And isn't it a beauty! Imagine a handsome shrub eight feet high, and covered from top to bottom with clusters of miniature roses the size of a split pea, and you will have an idea of it. Nothing can be more charmingly beautiful. It is worth waiting for not only five years but twenty-five years. You see, a few years more or less make but little difference to us old fellows if we get a good thing at last, and this Double Crimson Thorn is most emphatically a good thing. I am sorry they called it "crimson," as it is not, but a most charming full rose color. How I wish you could print in colors.—*Am. Agriculturist.*

Hoteia (Spiraea) Japonica.

This, although hardy, is an excellent plant for forcing. Its lively green foliage and charming white flowers make it extremely useful in all kinds of ways, and the demand for bouquet work, as well as for furnishing purposes, is very great. It is easily grown, and no establishment should be without it.—*The Garden.*

Orchids.

Mr. Robert Warner writes the *Gardener's Chronicle* that the surest way to kill orchids is for the gardener to try some such careless methods as these:

I. Treat them in a manner entirely different from that which is found suitable to all other plants. Thus, for example:

1. Keep them always growing. 2. Keep them always in great heat. 3. Keep them always saturated with moisture. 4. Keep the young shoots always wet. 5. Keep them always hotter by night than by day.

II. Knock out as many leading buds as possible when potting or blocking.

III. Let thrips, scale and aphis suck out their juices and eat their leaves.

IV. Let wood lice, cockroaches and other vermin eat away their roots.

V. Be careful to place any especially fine and strong plant where it will have frequent drippings of ice-cold water from the roof. Should it live under this *regime*, crack a pane of glass and let it have a constant drip of cold water falling on, or a current of cold air blowing over it.

Foliage Plants.

A great mistake is made by many in the arrangement of the garden, in not giving sufficient attention to foliage plants. A bed of flowers may be ever so rich, and the display of colors may be dazzling, but if there is no frame-work of living green, the effect on the eye is rather painful than otherwise. The fault of many gardens is, too much glare. Masses of brilliant flowers—red, yellow, white and scarlet—are grouped together, until the garden is all afame with radiant colors, and its very gorgeousness is oppressive.

How refreshing it is to the eye to have here and there a clump of rich, dark green foliage to rest on! While the gaudy hues of the flowers have a tendency to aggravate the heat of the summer day, the living green of the foliage is suggestive of cool, refreshing shade. In every flower garden there should be borders of emerald turf as a frame-work to the beds, and to occupy space not allotted to flowers. Foliage plants can be used with fine effect interspersed with the flowers, and in every garden green should be the predominant color, or ground, while the flowers form the embroidery.

In the arrangement of flowers in vases and baskets, the same order should prevail. A bouquet without a background of cedar, arbor vitæ, or some other evergreen, is never complete, and is all the more perfect if ferns and grasses are interspersed.—*Ex.*

Horticultural Notes.

Weeping Trees.

With a fine, well kept and velvety, green lawn, tastefully planted with ornamental trees and shrubs, such as we have already named, the grounds around the dwelling may be rendered very charming, but the effect can be increased by a judicious selection of weeping trees. We name some of the most beautiful: European Weeping Ash; Weeping Beech; Cut-Leaved Weeping Birch; Camperdown Weeping Elm; White-Leaved Weeping Linden; Weeping Mountain Ash; Weeping Poplar; American Weeping Willow, and Kilmarnock Weeping Willow.

Market Gardens near London.

It is stated on the authority of the London *Garden*, that there are 18,000 acres of land devoted to market gardening in the vicinity of London, England.

Wintering Grapes.

Orrin Brown, of St. Joseph, Michigan, kept 17 baskets of Diana grapes last winter, by simply putting the baskets in a cool, dry cellar, covering them with paper, and then leaving them alone. It is said the flavor of the grapes was wholly unimpaired.

About Strawberries.

The author of "Daily Rural Life" in the *Rural New Yorker*—thinks beds of the improved sorts of strawberries should not remain more than two or three years, and is inclined to think it cheapest to destroy them after they have borne one good crop. Although he has tried 500 other varieties, he has found no superiors to Wilson's Albany, and Triomphe de Gand—taking all their good qualities into consideration. In his soil he has found none so productive as the Wilson's, while there are many better in quality and a few larger.

Too much Shade Unhealthy.

Mr. Greeley, a short time before his wife's death, said to a friend that the bronchial disease with which she was then severely afflicted, and which finally caused her death, was contracted by living in the "old house" upon his Chappaqua farm. That house stood in a forest grove which so overshadowed it that the sun was almost shut out. He said he tried to persuade his wife to let him cut away some of the trees, but she could not bear to see a single tree cut down. In time, however, the fatal disease got such a hold on her constitution, that Mr. Greeley put up a new house on a sunny portion of the farm, where the family lived during the latter years of their residence there.

Grafting Grape Vines.

I dug the dirt from the roots till I met a smooth place on the stocks, taking care to destroy as little of the roots as possible. I then sawed it off in a slanting cut, as I am positive it is better than a square one, for this reason, that all the gummy matter which oozes from the cut, together with the excessive moisture, instead of accumulating on the stock to the great injury of the scion, makes its way down the sloping cut, and the scion and stock will unite quicker, and make a healthier granulation than on a square cut. I next cut off about one-half an inch of the end of the slope for the scion to rest on. I did not make all the stock smooth, only around the edges. I next got a small hatchet ground as sharp and keen as possible, so as to make a cut instead of a slit, as I think the cut best in all cases. I next prepared the scions with shoulders, leaving just wood enough to keep the bark whole and perfect. The scion should be a little thinner on the inside than on the outside; it should be but two eyes long, unless the joints are very short, and then there ought to be three. I next split, or rather cut, the stock, inserting one scion in each. I used no wrapping of any kind, as the stocks, being ten years old, would hold the

scion like a vise. I next filled up the hole even with the top eye, and I considered the work done. At present writing I can show Concord, 95 per cent., 20 feet long, with well formed, healthy bunches of grapes on them; Clinton, about 25 feet, 95 per cent.; Ives, 20 feet, 90 per cent.; Martha, 50 out of 75, 15 feet, and all the other varieties in proportion. I would not have lost so many were it not for the dogs hunting rabbits in the grafted portion of the vineyard. I went over them once a week, and pulled off all suckers as they made their appearance. I pinched out all laterals, and now I have finally checked them. I expect a full crop of grapes from these vines next year, so there is but one year to wait for a full crop from vines that were worthless for the last six years, and would continue to be so but for grafting them. I advise all who have those worthless varieties not to delay a moment, but graft them immediately. I intend to try some experiments in grafting grapes in August, of the success of which I will inform you in due time. There is more to be learned in this branch of the business, and I am confident of my ability to ferret some of it out.

The scions for grafting should be kept dry, the dryer the better, provided their vitality is not destroyed, and I recommend grafting before the sap rises. I did not take extra pains in grafting this time. I grafted as many as 200 per day.—*P. H. Parker, in Southern Farm and Home.*

A Pretty Window Plant.

One of the best window plants, capable, as it appears, of resisting almost any hardships, to which plants in such circumstances are subjected, is the Aspidistra *lurida*. This plant, and its variegated variety, is grown largely in France and Belgium, in windows, corridors, etc., and might with advantage be employed here for like purposes.—*Gardener's Chronicle.*

Cutting Blossoms.

All lovers of flowers must remember that one blossom allowed to mature or "go to seed" injures the plant more than a dozen new buds. Cut your flowers then, all of them, before they begin to fade. Adorn your rooms with them; put them on your tables; send bouquets to your friends who have no flowers; or exchange favors with those who have. You will surely find that the more you cut off the more you will have. All roses after they have ceased to bloom should be cut back, that the strength of the root may go to forming new roots for next year. On bushes not a seed should be allowed to mature.

Avenues, Flower Beds.

We know from experience raised beds may, in some instances, be made very effective and at trifling expense. Take one, two or three—according to size—rough old stumps and place them in the center of the bed, rough side uppermost, and plant climbers and trailers in the bed and allow them to run over the stumps, but do not—as we have often seen attempted—plant in the cavities of the stumps, or failure must result. Some of the newer Clematis make splendid permanent beds in some places, and we doubt not would succeed admirably here. We have seen most excellent effects produced by planting good sized beds with low growing Evergreens, *Juniperus*, *Retinosporas*, Box, etc., interspersing a few good flowering plants for the summer months. Do not plant Rhododendrons singly, nor in dry exposed places—I speak here of summer exposure. On the north side of a hill, in the shade of, but at some distance from trees, if the soil be a nice loam or a peat soil, clumps of Rhododendron, Kalmia, etc., will thrive. Again, why should the hardy Azalea be entirely overlooked? Our native kinds, with some of the more beautiful Ghent varieties interspersed, are charming when in bloom, but of all permanent beds, we have seen nothing to surpass a bed of roses pegged down. Strong growing, free blooming varieties, suit this latitude, and the beds well made, properly planted, and the growth kept pegged down to the earth, and success is certain.—*Am. Farmer.*

Reading Notices.

A GRAND MEDAL FOR CLEVELAND.

The Wilson Sewing Machine Takes the Grand Prize at Vienna.

THREE separate dispatches from Vienna combine to dispel all doubt as to what sewing machine has won the first honors of the great Exposition. The first was a special to the New York press on Monday, and was as follows :

VIENNA, August 15, 1873.

The Wilson shuttle sewing machine was awarded the grand prize at the Vienna Exposition for being the best sewing machine.

The second was the regular Associated Press report, compiled from a long special to the New York *Herald*, in which the "Wilson Sewing-Machine of Cleveland, Ohio," was named as among the exhibitors which received "medals for merit," the highest class of premiums awarded at the Exposition. *All other sewing-machines will receive simply an award for progress.*

The third was a private cable telegram received yesterday from Vienna by Mr. Wilson himself, which was as follows :

VIENNA, August 19.

You have received five medals—two for merit and three co-operative.

The meaning of this is that the Wilson machine has received the grand medal as *the best sewing-machine*, and a second medal as the machine best manufactured—that is, embodying the best mechanical workmanship. Besides these, Mr. George W. Baker, Assistant Superintendent of the Wilson Sewing machine Company, receives a special medal for excellence of workmanship on the machine; Mr. Williams of this city receives a medal for the best sewing on leather, done by the Wilson; and Miss Brock and Miss De Lussey receive still another medal for best samples of family sewing and embroidery, done on the Wilson machine. This sweeps the entire board. Not only has the Wilson sewing machine been pronounced the most capable and efficient sewing machine in the world, but its work, on both dry goods and leather, is pronounced superior to that of all other machines. This verdict at a World's Fair, where all the leading sewing machines of both continents have competed before a thoroughly competent committee for more than three months, is the most complete triumph ever won by a sewing machine. We congratulate Mr. Wilson, we congratulate Cleveland on this admirable result. The people of the United States can henceforth be assured that in buying the Wilson machine for \$20 less than any other first class sewing machine is offered, they are purchasing the best sewing machine ever offered to the public. It is the people's own machine, made to do the people's work, and offered at a price which every one can afford to pay. It is the people's machine which has won this triumph; the judgment of the Vienna Committee only confirms the verdict that the masses had long ago reached by actual experience.—*Cleveland Daily Leader, August 20.*

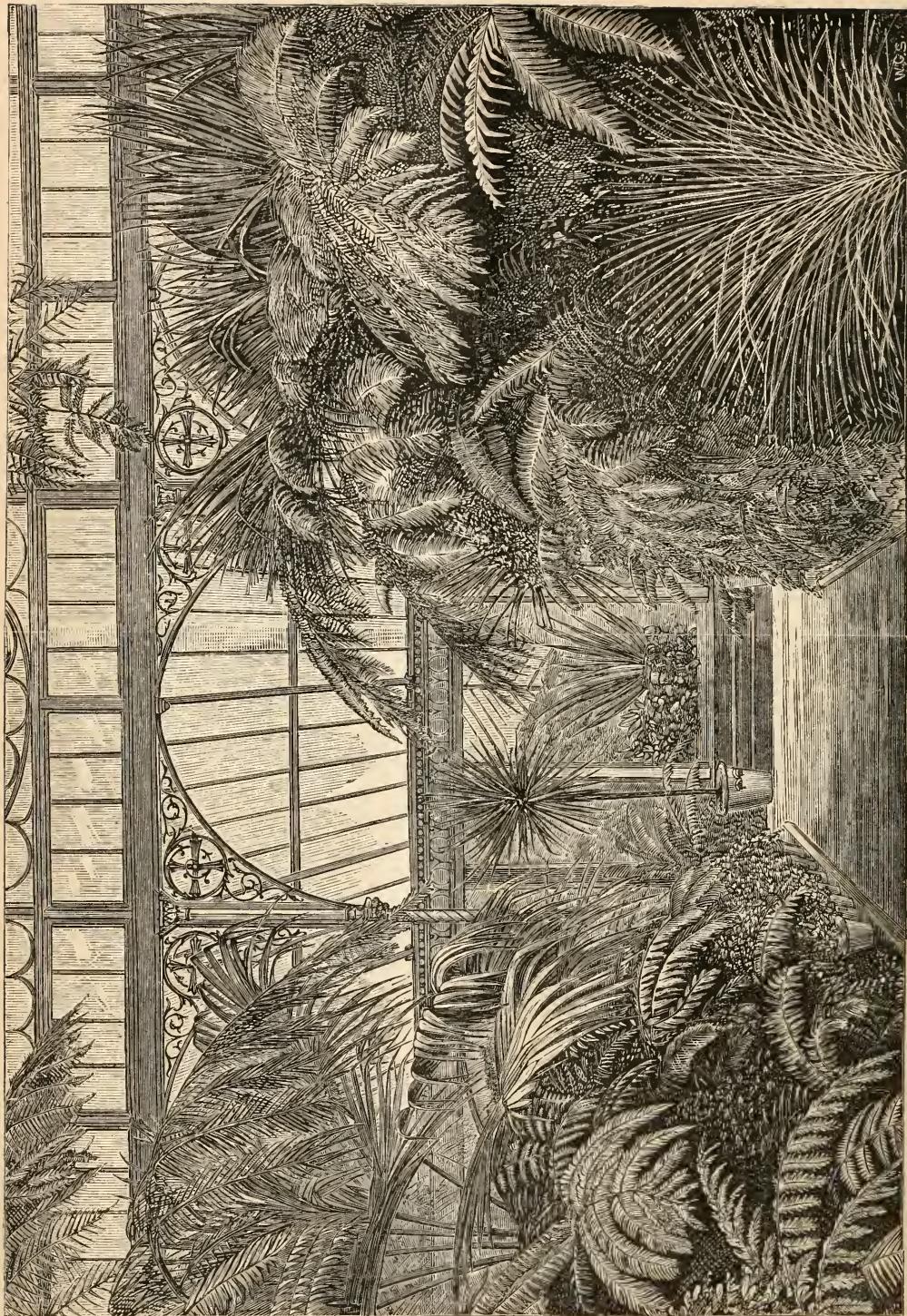
Bogus Vienna Premiums.

As we have taken ALL of the GRAND MEDALS awarded to sewing machines and work done on sewing machines at the Vienna Exposition, which fact has been announced in the newspapers by Associated Press telegrams (*over which we have had no control*), and consequently is unquestionable evidence, we deem it due to ourselves to caution the public against the BOGUS CLAIMS and paid advertisements of our vanquished competitors.

WILSON SEWING MACHINE COMPANY.

Cleveland, O., August 18, 1873.

Interior View of Conservatory in the Birmingham Botanic Garden



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Quarter Centennial Anniversary of the American Pomological Society.

Silver Wedding Session Proceedings.

THE Silver Wedding Anniversary of the American Pomological Society, was celebrated in Boston, on the 10th, 11th and 12th of September, with unusual splendor and interest. Never before has there been gathered together so many objects of pomological and horticultural value; while the audience, gathered from the friends and members of the Society, from all parts of the United States, was both the largest and most appreciative of any that have yet attended its meetings. The display of fruit was fairly overpowering, and the exhibition of plants, flowers and decorations in Music Hall, was of the most *recherche* character, well calculated to draw out the utmost enthusiasm. The various rooms where the exhibition was held, were thronged with visitors from the city and suburbs; and it is doubtful if any strictly promological or horticultural exhibition ever drew so large attendance. From eight o'clock in the morning till after ten at night, the fruit and plant rooms were filled with wondering visitors, whose curiosity was stimulated to the greatest stretch, and probably thousands formed a better idea of the great extent of the horticultural interests of the country than could have been gained by any other means.

Display of Fruits.

The display of fruits was exceedingly extensive in varieties, and noticeable for very large single collections. Much of the fruit was small in size, and not as highly colored nor as ripe as we have witnessed in other exhibitions, yet it was very attractive. The largest single display of fruit was by President Widler, 404 varieties of Pears—occupying the entire half of the lower hall, and on the tables opposite and running parallel, were the collection of Hovey & Co., of Cambridge, numbering 300 plates of nearly as many varieties. Another row of tables was occupied by the collection of the Cambridge Horticultural Society.

The capacities of the halls of the Horticultural Society were taxed to the utmost, and all available space was needed. The lower hall was reserved exclusively for fruits of Massachusetts; and in the upper hall were gathered the collections from other parts of the country. The scene here, as witnessed from the platform, was one of great beauty. The rosy-cheeked apples and clusters of grapes were packed close to each other as far as tables extended, vying with each other in their lovely, yet modest colors—and peaches, pears and plums, with blushes most picturesque, formed *cornucopias* of enticing fragrance and appetizing flavor. The major part of the center table was occupied with the collections from Nebraska—and although over 200 varieties had been spread on the table, yet it was found from the incapacity of the room, seven barrels more remained unopened. Almost equal in other respects was the collection from Kansas and Iowa; all finely colored and well arranged. It seemed exceedingly difficult to decide between the merits of such closely contending exhibitions. The fruits of Kansas were much the largest in size. Those from Iowa, by the Polk County Agricultural Society, were highly colored, yet the collection from Nebraska was so much the largest and extensive, it is not surprising, that the first prize was awarded to it, and the occasion is more than ordinarily noteworthy, since she is but the youngest of all the fruit growing districts of the Union. The display of pears was supplemented by valuable collections from Ellwanger & Barry, Moody & Sons, Smith & Powell, and Clapp Brothers. The latter had on exhibition unusually fine dishes of Clapp's favorite with specimens of some of their other new seedling varieties.

Utah contributed many choice plums, apples, peaches and pears. California was represented by excellent pears, from the orchard of C. H. Reed; while grapes were in abundance, from Canada, Central New York and the Hudson river.

The seedling grapes on exhibition came principally from J. H. Ricketts, Newburgh, N. Y., and E. M. Bull, Coneord, Mass. The finest peaches came from Delaware, as also the largest specimens of Bartlett and single varieties. The best display of native grapes came from Canada. Oranges were brought from the Sunny South and received honorary acknowledgment, while even from California, unusually large oranges and lemons were received, indicating the excellent adaptation of that State for their cultivation.

Display of Plants.

The resources in Music Hall were again called into play, to hold the galaxy of plant treasures and decorations, which too, added their share to the charming entertainment of the visitors. Throngs of visitors passed from the fruit halls to the floral hall, and yet again another hall—Wesleyan—had to be engaged to accommodate the promologists in their long discussions. Thus four halls were constantly occupied with floral or pomologist's objects of interest the most of the week.

The display of flowers was in general, both profuse and chaste. Tall tree ferns, palms and agaves, were placed on raised stands, underneath whose branches the audience moved to and fro, almost suggestive to the imagination, of a rich real tropical scene. Around the sides of the hall are arranged frames for holding cut flowers, gladiolus, phlox and dahlias. The varieties of gladiolus interesting us more than any other, were the new seedlings of Geo. Craft, Brookline, Mass., and J. S. Rich-

ard, being marked with the most exquisite colors. Around both lower and upper hall and balconies, these floral treasures were spread—while hanging baskets stood with ornamented plants, and smilax drooping everywhere produced a scene of enchantment. Nearly all the largest florists were represented by displays of choice plants, while the ladies were no less backward in submitting floral designs of bouquets, wreaths and similar decorations. Near the Organ appeared two very large vases, filled with a profusion of delicate flowers and drooping vines, and the periphery of the stage was decorated in a graceful manner, with plants on stands, or glasses, which almost hid its surface from the view.

Probably no scene was ever held in Boston or even in any other city of the country, combining so much truly artistic as this. A poetic correspondent of the *Boston Post*, writing of the romantic suggestions of the scene, says:

Beethoven has looked down with bronze benignity on many a gay scene in the Music Hall, but he has surely never seen anything more brilliant and beautiful than the present floral display. Fancy fairs, with their bravery of coloring and artistic taste of decoration, pale altogether before this wonderful exhibition, and bazaars seemed stripped of half their fascination. Luxuriance of foliage and depth and intensity of color fill the place. In the center of the Hall are tall palms, and surrounding them, wonderful tropical ferns, tree-shaped and huge, and foliage plants of all descriptions and kinds. The greens vary from the cypress to the palest tints that are scarcely more than white. Now and then, shining out of the surrounding green, a bunch of blood-red foliage shows itself, some gigantic member of the Coleus family, put on exhibition for its size and beauty. How it overshadows the memory of your plant at home that has been your pride and boast, every red leaf that showed itself cared for more tenderly than the last. Your plant is like a dwarf beside this giant; but after all, it is beautiful still and your own; there is much in that knowledge to reconcile you. Rustic baskets of ivy and other twining plants stand in unexpected places, and trail their greenness down even over the dark floor. Against the sides of the hall are arranged the flowers, a mass of brilliant autumn coloring. Purple asters and self-assertive yellow dahlias, are ranged in queer confusion. Spikes of red and white phlox, looking as familiar as if they were fresh from a well remembered country garden, are in no wise dismayed to find themselves side by side with perfumed lilies, whose satin white petals are flecked with crimson stains; the heart's blood of the dying summer spilt on the blossoms of her latest, sweetest plant. Gladiolus make banks of brilliant beauty, ranged along the foot of the first balcony, and are a gay background for the green plants in front of them. The platform is filled with tables holding choice bouquets and table designs, in which were tube roses, their perfume striking through every other odor, until the air was languid with its richness; carnations and purple heliotrope, delicate tea roses with petals as exquisitely tinted as seashells, and a delicate perfume that was rather a suggestion of odor than odor itself, shy mignonette, and with it all the fairylike green of the smilax, or the deeper tint of some other foliage. At the back of the tables were pots of New England ferns, all the varieties that are found in our woods; still holding, even in their exile, something of the pungent fragrance that characterized them in their home by some mountain brook, or down in the quiet,

shadowed valley. A climbing fern at Beethoven's feet is ambitiously trying to reach his height. Vain attempt; it stops short not more than quarter of the way up, and droops its green, tiny flowers in sheer weariness and disappointment. Delicate maiden's hair shows its fairylike traceries against the brown of the organ carvings. The scene is lovely from every point. It is the luxuriance of perpetual tropical summers, and the glories of the sadly miscalled temperate autumns. One has grown rank and large in scarcely varying warmth; the other brilliant with the fervent, burning heat of the short New England summer. Prettily-dressed women are wandering up and down the improvised garden walks, or are leaning over the balconies looking down into fairy-land. They tell secrets under the shade of spreading palm trees, who have hitherto been content to exchange confidences under pine, or elm or maple. They talk of winter costumes while standing by a tropical fern, and are alternately enthusiastic or matter-of-fact, as they vary their conversation from autumn flowers to autumn cares. They play at cross purposes with life here as well as elsewhere; but the flowers, even, are brighter for the gay, human presence, and surely that group of pretty girls are prettier for their surroundings."

Discussions, Entertainments.

Amid so many objects of delight, it was difficult to bring the attention of the delegates closely down to thorough business. The audience was constantly changing. Horticulturists drifted away and spent a day at Forest Grove or Mount Auburn Cemetery, others could not resist special invitations to the residences of Mr. Payson, E. S. Rand, Jr., Chas S. Sargent, Hovey & Co., while the entire society, to the number of 200 or more indulged in one day's festivities, with breakfast at the residence of Wm. Gray, Jr., with an afternoon's ride and dinner at the far-famed Italian gardens, lakes and conservatories of H. H. Hunnewell, at Wellesley. Of the entire catalogue of fruits, only apples, pears and grapes were discussed, and these not thoroughly. Essays were almost entirely omitted reading, although there was much disposition to call for them; the order of business was so changed that the former process of starring was totally discontinued. This will hereafter be done by the proper fruit committees. In open convention the members in discussion have liberty to make remarks for or against any variety, mainly to show reason why its position in the society's catalogue be changed.

President's Address, Premiums.

The President, in his most happy mood, felicitously described the progress of the Society up to the present time, and contrasted it with the marvellous results shown in the production of fruit everywhere throughout the Union. He mentioned at length the efforts for production of new seedling fruits and recommended increased attention to this branch, preferring that we depend more upon our own native sorts than on foreign stock. Where formerly we were obliged to rely upon imported kinds for our best fruit, now they are disappearing and new sorts take their places.

Of the 43 kinds of plums in our catalogue, more than half are American; of 58 kinds of peaches, more than two-thirds are American; of 19 kinds of strawberries recommended by the Society, all but three are American; of 31 varieties of hardy

grapes all are American; thus, out of 151 varieties, all but 37 are American. In the publication of its catalogue and revision of fruit, the Society has done much more than the public have given it credit. In 1848 there were but 54 varieties of fruit recommended. Now the catalogue contains 577 worthy kinds, and 625 varieties have been rejected, making a total of 1,202 varieties, upon which the society has set its seal of approval or rejection.

The system of giving premiums was very generally discussed and by unanimous vote, the Society is hereafter *forbidden* to appropriate any of its funds to the purpose of cash premiums for the display of fruit. But in lieu thereof, the Society have adopted a medal, known as the Wilder medal, to be given to all objects of merit which include both fruit, new seedlings and best essay.

The business transacted by the Society was most thorough and complete, settling beyond all questions in satisfactory and harmonious manner, subjects which had long excited comment and considerable difference of opinion. The place of next meeting is definitely fixed at Chicago, in 1875, and likewise there will be an extra session at Philadelphia, at the great Centennial Exposition.

The exercises terminated with a banquet on Friday evening, in Music Hall—given by the Massachusetts Horticultural Society to the members of the American Pomological Society—nearly 1,000 persons were present and both music and social conversation passed away the time most enjoyably, until late at night. Thus closed this most brilliant session of the Society. Its Silver Wedding was appropriately celebrated, and the close of the first quarter century finds the Society in most successful and popular standing, the strongest and most influential organization of its kind in the world.

Serious Damage to a Vineyard by Lightning.

A NEAR neighbor of mine has a very promising young vineyard, rows ten feet apart and 360 feet long; about midway of the length of the vineyard stands a small chestnut tree 20 feet from the outside row of grapes. On the 26th of June, we had a small thunder shower, this tree was struck by lightning, which came down on two sides of the tree, causing the death of the tree and at least two-thirds of the vines in three rows of the vineyard; the vines in these three rows are trained to wire, the balance of the vineyard is trained to wooden slats and escaped injury; the vines at the extreme ends of these three rows suffered as badly as those near the tree; the row nearest the tree was set this last spring, many of the vines not yet reaching the first wire and are supported by stakes. I notice a number killed in this row, where neither the vine or fruit was touching the wire. The ground where the tree stands is being used for Irish potatoes; they also suffered, the vines being killed immediately under the tree and three rows on either side to the distance of 75 feet; from this freak I would judge it is not safe to have any trees standing near a vineyard where wire is used, though a similar occurrence might not take place in the next century. I am of the opinion if wire had been used for the whole of the vineyard the damage would have been much greater, from the fact that the third row from the tree is 40 feet and suffered about as bad as the nearest one.

Bowling Green, Ky.

A. D. WEBB.

Interior View of Conservatory in the Birmingham Botanic Garden, England.

AN American gardener feels a thrill of interest in reading the descriptions of the finished Conservatories and Botanic collections so famous on the European continent. Whether it is owing to lack of skill, culture or interest here, among American gentlemen, it is yet true, that our merchant princes rarely ever lay out or provide such elaborate display as do the princely families of England and Germany. There may be pecuniary ability, yet an American hates detail, and it is easier to take care of his capital in bank stock, and once led in this line, all income and simple interest follow in the same groove. And yet, while we seem to look longingly to the beautiful picture of conservatory wealth and floral treasures across the waters, yet, our English cousins seem to take pride in devoting part of their ample grounds to the *American garden*. Thus, though copying from each other, yet we are approaching one another in interest and unanimous sentiment.

Mr. D. T. Fish, writing to the *Gardener's Chronicle*, a sketch of the plant curiosities at Birmingham, says: Art and Nature have worked together to create a charming variety of terrace and dell, rolling ground and level plains, retired rosaries, and such American gardens, smooth archy ground, and freshly exhumed rocks, clothed with ferns and crowned with foxgloves. This admixture of the color of the foxglove with the green of *Osmunda regalis* and other ferns, was one of the most valuable hints I picked up at Birmingham.

I had introduced this before but not in such bold manner. The effect was charming, and but for the sameness of many of the masses of sandstone rock, it would have appeared most natural. The furnishing of those 12 acres of ground was as varied as their character.

In one spot, the last examples of carpet, summer or spring bedding, or grouping in masses; divided by straight lines, as seen near the conservatory, were formal beds on the terrace, greened down to sobriety by intervening spiral yews; close by, hanging ribbons on the slope. A few steps more, a fine *Picea nobilis*, 50 feet high, *P. Pinsapo* of rare growth or stature, five *Thujopsis borealis*, stately Magnolias; Anon vilas in masses, Lilies and *Forget-me-Nots*; a peep at botanical rarities, in beds or groups on a lower level, and then such masses of Rhododendrons and Azaleas as one seldom sees; while throughout all and connecting all, as a beautiful thought or idea, governing a life, is the green turf in charming sloping glades or widening sweep of beauty, inviting repose.

But the crowning beauty of these most interesting gardens is the great Conservatory, with aquarium in the rear; the former a modern house of great beauty of structure and most elegant proportions. The entire structure is highly ornamental, this beauty being much enhanced by portions being picked out with chocolate and gold.

The furnishing of the Conservatory was in keeping with the outside, and it contained many excellent examples of good cultivation admirably arranged. Among the finest specimens were the following Ferns:

Dicksonia Antarctica.	Cyathea Medullaris.
“ Squarrosa.	“ Princeps.
“ Arborescens, rather rare and noble.	Cibotium Regale.
Alsophila Australis.	“ Spectabile.
“ Excelsa.	“ Schiedei.
“ Contaminans.	

And enormous plants of *Platycerium aleicorne*, seldom seen in such size and condition. What the *Dasyllirion anotichum* was like is seen in the wood cut.

There were likewise very fine plants of *Phormium*, one of *P. tenax variegatum*, and of *P. Colensoi variegatum*, and noble specimens of *Cycas revoluta*, *Latania borbonica*, *Sabal umbraculifera* and other palms. The beautiful *Lasiandra macrantha* was well done, and quantities of an old-fashioned showy plant, the *Diplacus*, not puniceus, but glatinosus, made a fine display on the shelves. A charming old plant, *Plumbago capensis* was also remarkably well flowered. The roof of the aquarium, or Lily home, attached to the Conservatory, was well covered with climbers; prominent among these was a very fine variety of *Passiflora quadrangularis*, this seemed different and larger than the sort generally grown.

Allamanda, *Schottii* and the *Stephanotis* were extremely well done in this house, a good effect was produced by the little used and curious *Aristolochia ornithocephali*. *Bottle* and *Smoke* Gourds were also seen to good effect on the roof in company with the Souly green cucumber. In the tank were some plants of *Nymphaea dentata*, *N. Cærulea* and others, and a seedling of a beautiful and delicate pink, of the size of *dentata*, said to be a seedling between *N. dentata* and *N. rubra*. Over the tank various baskets of *Stanhopes* were pushing grand masses of flowers, and I got a new idea of basket-furnishing, the bottom and side filled with *Epiphyllum* crowned with a graceful plant of *Adiantum aethiopicum*. Among the Palms, were tastefully arranged a fine plant of the very rare *Stiffia chrysantha*, and last and best of all, probably, for health and size, a noble specimen of *Pandanus utilis*. Among the orchids and dendrobinus was *D. Speciosum*, a hardy New Holland Orchid, very useful for winter flowering.

Moranta, *Caladium*, *Dracaena*, were well represented, and the collection of Mexican and other Ferns, was rich and extensive. Among the latter, *P. Andromedifolium*, an exquisite California Fern. Here, too, I met with the little grown *Aspidium*, *fragrans*, whose fronds are as sweet as if perfumed with the essence of violets.

Report of the Committee on Pear Blight, its Cause, Remedy or Preventive.

HON. MARSHALL P. WILDER, President American Pomological Society:—
Dear Sir—The Committee appointed at the last annual meeting of this Society, to investigate the cause of pear blight, and, if possible, recommend a remedy or preventive therefor, beg leave to submit as follows:

The task allotted to your committee is connected with unusual difficulties, as the subject is one that has for more than a quarter of a century remained an unsolved problem. We therefore entered upon the performance of our duties with the conviction that our efforts must fall short of doing justice to the object in view.

Pear blight assumes different forms and has consequently different causes for its origin. One form attacks trees *gradually*; its approach is slow and may be detected for months, and often during the preceding season of growth, before the tree is fully affected. This form, which may be termed gradual blight, is seen at all seasons during the period of active vegetation, from early spring until September. Its progress is usually arrested by a liberal top-dressing of liquid manure, so far as the roots extend and a severe cutting back of the branches. This must be done whenever the tree assumes an unhealthy appearance. The cause, then, may be safely attributed to exhaustion, and the remedy consists in replenishing the exhausted supply of plant food. This form of blight is often noticed in orchards left unworked and where the annual or biennial top dressing with fertilizing agents has been withheld.

Another, and this is the most fatal form, attacks a tree or a portion of it suddenly, causing the affected part to blacken in a few hours after the tree is struck; this is commonly termed *Fire blight*. This form is periodical in its attacks and migratory, as it seldom remains permanent in a locality, but leaves an interval of from ten to fifteen years between its occurrence. Its greatest intensity is on its first appearance, which occurs usually when the fruit has attained half its size; it decreases as the season of vegetation advances, but reappears again the following summer with less of its previous intensity. After decimating a section of country during two consecutive seasons, there will be an interval of a series of years, during which, blight in its other forms may occur, but there will not be a wholesale destruction as during the prevalence of epidemic blight. Every observation tends to the conclusion that fire blight is caused by zymotic fungus, whose presence is not detected until life is destroyed in the affected parts. This form offers a wide field for the investigation of microscopists, and from their future labors, we hope to arrive one day at the origin of this fungoid growth. We are unable to arrive at a satisfactory conclusion, as to what peculiarities of soil and temperature induce the favorable conditions for the development of this fungoid vegetation.

In the Experimental gardens of the Department of Agriculture at Washington, the following mixture is prepared: Place a half-bushel of lime and six pounds of sulphur in a close vessel, pour over it about six gallons of boiling water, adding enough cold water to keep it in a semi-fluid state until cold. It is used as a wash and applied to the trees and branches as high as can be reached. It should be applied two or three times during the summer. Since this preparation was used, no trees thus treated have been lost, although small limbs not coated with the mixture were attacked and destroyed. Carbolic acid has also been used without any perceptible difference in the result from the lime and sulphur mixture. Boiled linseed oil, applied to the trunk and limbs has been tried near Norfolk, Va., with marvelous cures, as reported. We mention this instance of the use of an extraordinary ingredient resulting in good effects, as contrary to what is usually the result when using this application upon the body of trees, its effects being to seriously injure the tree if it does not destroy it.

Still another form of blight is doubtless caused by mechanical action, by the rupture of tissues consequent to a sudden superabundant flow of sap. This attacks

only our most thrifty growing trees, either in early spring, when vegetation first becomes active, or after a period of drought and partial stagnation of vegetation, when abundant rains suddenly force out a luxuriant growth; moderately vigorous trees are never attacked. It is often noticed in very vigorous trees that the bark of the trunk is split longitudinally; whenever this is apparent, such trees are always free from this form of blight, as the pressure upon the cellular and vascular tissues has been relieved. From a series of experiments commenced in 1857, it is demonstrated, that whenever trees whose bark had been longitudinally incised and divided, never showed any signs of this form of blight.

Peculiar methods of culture undoubtedly influence the causes of blight; but upon this there exists a wide range of opinion. Clean culture and repeated stirring of the soil, while it may in many instances be conducive to most beneficial results, will often cause a total destruction of a pear orchard. In seasons of zymotic fungoid or fire blight, highly cultivated trees fall early victims to the scourge, while those cultivated in grass with an annual top dressing of manure usually escape the contagion.

The third form of blight caused by mechanical action is seldom found in orchards where the soil is left undisturbed, but is so common in gardens or where the trees are thoroughly worked, that it has become only a question of time for the entire destruction of one's orchard.

In the Southern States this form of blight is the most destructive, as it has become endemic to all highly cultivated soils. Wherever the land is allowed to become coated with grass or weeds, but kept cut down every few weeks and an annual top dressing of manure is applied, the result has been most satisfactory in an abundant crop of fruit and an almost entire freedom from blight.

P. J. BERCKMANS,
JOSIAH HOOPES,
Committee.

Five Summers in the Land of Flowers.

BY OLIVER TAYLOR.

A N article in this month's issue of THE HORTICULTURIST, by Al Fresco, I consider calculated to mislead, by failing to tell the whole truth and give the reasons therefor. That I can tell all the truth on the subject I don't pretend, but what little I have learned I feel it my duty I should honestly tell, and in so doing I desire to be distinctly understood, first, that I am not interested nor endeavoring to injure any land speculation in the State, and secondly, that I am naturally a sanguine person, and thirdly, I have been engaged in horticultural pursuits all my life, and that is not much short of one-half a century; nor do I expect to make my home in other northern climes because 'tis there easier to accumulate a fortune.

Orange growing in Florida has been the subject of much speculation, and to the

novice to-day is much of a puzzle to explain, and why? The climate and soil of Florida are very peculiar, and therefore but seldom understood until experimented with. The sandy foundation is so porous and devoid of nutriment; the surface where much sand exists necessarily gets so hot in summer, that everything decomposable in it must decompose with the united effects of the powerful sun and abundant moisture, always present in the air to such a degree that plants must do or die, in a very short time; and this is why 'tis called the land of flowers; the majority of plants bloom ere they grow often one-tenth of the height they do farther north. I have often seen blossoms larger than all the other foliage on the plant. This forcing process so carbonizes the vegetable matter that goes to fill up the marshes, that the marsh mud is not as valuable when applied to plants as one would suppose, though it be all made from vegetable deposit.

This muck when dry is a powerful absorbent of ammonia, and this explains the cause why it often injures plants when first applied too abundantly, close to the bare roots of trees. I have heard of several persons injuring their young orange trees by such applications. If finely pulverized and saturated with ammonial manure it acts finely and lasts longer than any manure I know of here.

The low wet lands and those but two or three feet above the water level, where the wild orange is found in the thick hummock, with often immense live oaks six and eight feet through, with a sandy subsoil always wet, if cleared and exposed to the sun, will not make a permanent grove without ditching and manuring to an amount per acre, that deters even very enterprising persons from undertaking it. At Sand Point, most of the inhabitants prefer planting in the dry pine woods, and there with sufficient manure they do best, and this want of sufficient manure is the great drawback to extensive orange growing. To grow cattle to an extent sufficient to produce an amount of manure, requires one to live so far from their neighbors that life is too lonely, and the necessaries of life that come from a distance too expensive. Cattle ranges in so thin a soil must necessarily be far apart to get the proper amount of food. The thinness of the soil generally throughout the State, will cause the producing of oranges to be so expensive, that an abundance of fruit will not soon be raised sufficient to supply all the inhabitants of the State, though they are shipped off for sale as much as possible for the sake of the money they bring. A large per cent., often one-third of the fruit on a tree, cracks open before ripe, and those that are shipped do not bear transportation as well as oranges raised in dryer climes. I would never advise any one to go into orange raising to make a living in Florida, unless they can secure some of the few favored spots where Indian mounds have made a deeper soil, or some river deposit furnishes an abundance of suitable soil, which seldom occurs. That orange trees will produce in poor sand is not reasonable, and in this town I have been shown one grove of 50 trees that have been planted and the ground kept clear of weeds for 25 years, yet they have not produced a peck of oranges, yet. I found nearly all the women living in what is considered the best sections for orange growing, quite glad to leave the country for good, and seldom could I find a man that had been on his place five years, but would gladly sell for one-half cost.

Injured Apple Trees.

I HAVE in former articles, in various horticultural publications, called attention to the tall, old, and in quality of fruit, not the best apple trees in New Jersey, damaged by causes that operate in the feebleness of age, and whose value as orchard or dooryard trees had ceased. And I wrote certain articles ridiculing the want of thrift in these matters in that State, which suffered these trees to stand. Last year I saw whole orchards dead or dying in New England, by a cause more serious than that in New Jersey. This year the blighting cause is severe, which began only two years since in the inexhaustable lands of Central New York, and is now threatening us with a similar loss. It is not a thing to be looked for with us in all the wheat region of this large State, that an apple tree should cease its healthy foliage, and a reasonable fruitage, no matter how old it may get to be; but last year, and this year also, it is quite a common sight to see trees in a decline, with stunted, yellow leaves, dead ends of small branches and occasionally large limbs dead. And, as in New Jersey and Massachusetts, the cause is not very apparent. I see, too, that it is quite common to speak trivially of it, as in the July, 1873, number, of the monthly report of the Agricultural department, where this disease with others is not spoken of as diseases, but as "the intense cold of last winter, and in the southern sections of the country, late severe frosts and freezes in the spring." "Vast numbers of peach trees and *many apple trees* were killed outright." Others speak of being "killed to the ground" by the cold, not to quote others equally in error. Now we apprehend that while the frost and cold may damage the blossoms and kill them, and injure to a certain extent, the foliage of the apple; so hardy a tree is not so commonly killed in limb or "to the ground" by the effect of the winter only. And that it becomes all intelligent writers to feel that these generalizations of "hard last winter on apples and peaches, the late frost," and "hot sun of early spring, did the damage," and other like expressions, are but mere confessions of their ignorance; that knowledge must go beyond these more vague guesses, which are from immemorial barefaced assertions. It is as true, that "the corn died because it was planted in the old of the moon" or "in the wrong sign" (when neither "the sign" nor "the moon" had the least knowledge of any corn planted on the face of the earth), as to repeat *the old moon story* or the *everlasting sign*, over the death of trees and vines, merely because "the winter killing" was the last of a series of causes, or not the great cause; this is contemptible if viewed in its proper light. It is honorable to say the winter of 1872-3, was followed in the spring of 1873, by a loss of vigor in apple trees, and in many cases by the death of the tree "to the ground," for then the writer acknowledges indirectly, that he is ignorant of the cause of death. It is correct, that a man, say Col. Live-long, died very old, but to say "he died of old age" is absolutely false, for there is no disease of that name, and not one of the human race dies, unless disease is in some form the cause of death. He is almost a fool in knowledge, who asserts such absurdities, solely as causes of death.

We say not this in the emphatic way we have just written it, to wound the feelings of any one, but as a bitter medicine to cure the evil of hastily attributing to our climate and to our winters, what does not properly belong to them. We also

say it, because we shall never reach the cause of "apple-tree blight" if we are not sensible to the stupidity of such statements. "Apple tree blight" has driven the apple largely out of Europe. It is coming, and from the east, westward, in the line of moderate and not severe climacteric influences, sweeping the trees of their reliable certainty of fruitage, and in certain regions almost or quite destroying the trees. And we must attribute the cause not to winter's extremities, but justly to "oyster-shell louse," to "minute insects at the root," and such causes that undermine the health, as tubercle in the human subject poisons the whole body, and does it in a way not easily discovered, and I apprehend that the cause or causes are not yet rendered plain to us all by anybody. My own trees until last year were vigorous, they are now dying; have clouds of a minute fly rising near night from the ground over the roots. Yet I am by no means certain they are *the cause of all the trouble*. It is also true, that two trees, whose roots are intertwined with those of very large vines (Isabellas) which lost their tops, which were so large as to run seventy and eighty feet, and whose stumps and roots are dying of Phylloxera, are the worst affected of all those trees. Yet, I am not sure that the dying vine roots and the dying apple trees are affected by the same insect.

Nor am I willing to admit that it is any change in soil that is the cause. Nor local causes, for so general an evil. I only mean by this article to assert that we need to have such trees carefully dug up, and the cause, be it what it may, determined, if the present apple tree loss is to be completely understood. We need professional entomologists, not only, but competent men in every department of causes, to investigate and report *accurately*, not *by surmises*.

S. J. PARKER, M. D.



Blight in Fruit Trees.

EDITOR HORTICULTURIST:—The blight in fruit trees has caused a great deal of thought and investigation by fruit growers for many years. Many preventives and remedies have been suggested and many causes assigned for the disease, all appearing reasonable at the time, but liable to explode the next year. It has been argued by some, that wet seasons are more conducive to blight than dry ones. This theory don't work well; last year being a rather dry season my apple trees blighted very badly; this year has been unusually wet and they are entirely exempt from blight. I have a small pear orchard of some 300 trees, all dwarfs mostly, six and seven years old; thus far I have not lost a tree from blight; I might say I have had none of it in my orchard; they have passed through wet seasons and dry seasons unharmed, while a neighbor of mine has several hundred pear trees from 12 to 15 years old, mostly standards; he has had but little blight until this year; very nearly all his trees are now seriously affected, so much so, that he fears the entire loss of many of them. Thus it appears that the blight works in a mysterious way, and has not been satisfactorily accounted for by the knowing ones, and I fear never will be. Nor is it probable that an effectual preventive will ever be discovered.

Bowling Green, Ky.

A. D. WEBB.

Orange Culture in Florida.

A RECENT number of the *Rural South Land* contains a letter from a gentleman who has been spending the winter with Colonel Hardee, of "concession" celebrity, near Jacksonville, Fla., from which we extract as follows: "Your correspondent, J. B. R., makes inquiries relative to the budding and grafting of the orange. Now, I cannot speak for your State, but budding and grafting is a perfect failure in Florida, compared to the sweet seedling. The well known Dummett's grove on Indian River has eighteen hundred budded trees in full bearing, being about twenty-five years old, and the largest yield it has ever made was one quarter million oranges. This year it only produced one thousand, while Hart's grove just opposite Pilatka has only four hundred trees, sweet seedlings, occupying four acres, produced an average of two thousand per tree, and brought Mr. Hart every year from \$9,000 to \$12,000.

"But persons planting the seed for seedling trees should be careful in selecting the seed from seedling and not budded trees, for the latter is not reliable, often producing sour oranges. The seed from Hart's grove planted in Florida will produce a better sweet orange than the original. The Mandarin orange does not succeed in Florida, compared to the large Smyrna, which in my judgment is the largest, sweetest and finest orange in the world. I have made arrangements to plant a large grove of this variety, and would respectfully advise your correspondent to do the same. Colonel Hardee thinks that August is the best month for transplanting the orange, and I should judge so from this fact: Last August Colonel Hardee contracted with Mr. S. V. White to plant and warrant to live and to do well for one year one thousand sweet Smyrna oranges, six months old, from the seed, then about eighteen inches to two feet high. This month Mr. White ordered five hundred more of the same oranges, and as there was sickness in the colonel's family, he requested me to take up six hundred, the one hundred extra was to replace the dead ones, when I found to my surprise that there was very few if any dead; the few that looked badly no doubt would have come out this spring from the roots. The rest were looking well and growing finely."

The Phylloxera.

SINCE I wrote the article published in the last HORTICULTURIST, I have been anticipating the appearance of the insect; but have been unable, to this date, August 12, 1873, to find a single specimen, either on root or leaf of the vines in Southern Cayuga Valley. Nor in my July visit to Washington, could I find a specimen at Williamsport, Pa., where I saw fine grapes in door yards; nor on the way to and from Washington. Of this I am sorry, as it will prevent a more accurate description of the insect from my pen. The consequence is, that the growth of leaves and canes is very healthy and the clusters of grapes remarkably clean, large, and with the promise of fine ripening, though in the Cayuga Valley the season is backward and nights so far in August, cool. It, too, devolves on those situated in any part of the United States, where the insect this year can be found in any degree, to supply the information now so much needed of its habits, devastation and consequential ruin of all the hopes of the vineyard. I regret to see that even the intelligent observers of Hammond's Port, N. Y., while they speak of the

excellent state of the vines and grapes now, seem to be ignorant of this insect, so abundant with them year before last. They speak of "winter's damage," etc., without reference to this as a cause.

This season answers the inquiry of our European correspondent, "Does the Phylloxera injure vines every year in America?" This season says no! Only in exceptional years, and, so far, at periods of eight to twelve years; then it comes as a thief in the night, and ordinary American citizens fail to detect it, it is so small and obscure. Please report who can find this year, this insect.

S. J. PARKER, M. D.

The Vine in the Orient.

THE sacred record does not state positively that grapes grew to perfection in the garden of Eden; but there is very strong extrinsic evidence that such must have been the case. The soil and the climate were admirably adapted to the growth of the vine; and profane history declares that from the delightful regions along the sunny banks of the Euphrates and Tigris men went forth in various directions to people the earth, carrying with them religion, civilization and a knowledge of the arts and agriculture. Prominent among these arts was that of making wine; and dear to those ancient worthies was the custom of using the fruit of the vine as a wholesome beverage, and rendering thanks for it as a divine gift. True, that good man Noah was a little indiscreet on a memorable occasion; and his successor, the righteous Lot, betrayed a similar weakness. But those were exceptional abuses of a bounteous gift that was designed to cheer and comfort, as may be fairly deduced from the inspired utterance, "He sendeth wine that maketh glad the heart of man, and bread which strengtheneth man's heart." Bread to strengthen, and wine to gladden! Strength without gladness would be a mere possession without the power to enjoy it.

But what were the methods of cultivating the vine and the modes of manufacturing the gladdening beverage in those earliest ages is all left in obscurity. Not until about the time of the Greek Homer did any one appear to record these modes and methods in due form for the information and gratification of subsequent generations. At that time the Grecian peninsula, with numerous islands sprinkled over the Ægean sea, and portions of the Asiatic mainland were already inhabited by a highly cultivated and practical people, whose science, art, manners and customs were embalmed in the unrivalled epics, the exquisite lyrics, the exciting dramas, and the graver histories embraced in their literature which has been preserved and may be read and known by all men. If these merry and enthusiastic admirers of Bacchus are to be trusted, and the busy American of the nineteenth century has the leisure to peruse their testimony he will find, among other things, that: Great care was exercised in selecting the ground for a vineyard; that the soil might be of the most desirable quality; that the exposure might be faultless; that the tender vine might be protected by nature against the ravages of the most dangerous and destructive winds and storms; that an unfailing supply of water might be near to defeat the disastrous consequences of a possible drought; and that all the rules suggested by science and deduced from experience might be so carefully followed that the temperate and frugal proprietor could confidently rely upon his vineyard as a sure source of comfort

and competence. In proportion to its extent of territory, peninsular Greece gloried in a great diversity of soils and climates. Almost entirely surrounded by seas, it had a surface made up of mountain, valley and plain most skillfully arranged; and a soil of clay, sand, loam, or of volcanic origin, any one of which soils might be encouraged to produce excellent grapes; but the variety of vine selected, and the treatment administered, must be judiciously adapted to each particular case. A hillside looking towards the southeast, and possessing a volcanic soil, frequently received the preference. The spot must be especially protected against the north, northeast and northwest winds, either by abrupt hills or natural forests, or by groves or other defences reared for that very purpose. And then, to bar the inroads of beasts and lawless bipeds, a thick thorn-hedge was planted around the vineyard, and a deep ditch enclosed all. Within was built or dug the wine press, with the huge vat to receive the expressed juice; and a tower was erected where the watchman might guard the grounds against the depredations of birds, beasts and thieves, precisely as indicated in the Scripture parable of the vineyard that was let out to husbandmen.

The ground was carefully cleared of all trees and foreign plants and roots, except in those cases where trees were to be employed for training the vines; and then such as were required were pruned and allowed to remain. The soil was sometimes trenched and always subdued and mellowed, and enriched if necessary. As the vineyard, when once planted, was expected to last for several generations, it behooved the original planter of the vines to bestow labor, care and expense with a liberal hand.

When the chosen ground was a hillside, it was usually terraced, and thus, like the famous hanging gardens at Babylon, or the vineclad hills of modern Switzerland, it added to the general aspect of the country a charm of beauty to be relished by native and stranger; and at the same time brought health and independence to the possessor.

There were three principal modes of training the vine, viz., on trees, on trellises and on stakes; and not unfrequently old family vines, that were cherished as heirlooms, might be seen climbing up walls, or adorning the front and sides of the peasant's cottage. Then, when the scorching rays of a summer sun had compelled the laborer to seek the cool shade at noon-day, he would be instinctively attracted to his own cottage door, and there, while enjoying an hour's repose, he might regale himself upon the luscious clusters hanging temptingly within his reach.

The slips were set with an eye to their future training. If they were to be supported by stakes, they were planted in rows and near to each other. If trellis was to be used, the slips were placed near each other, and in rows at a considerable distance apart; and when the vines were to twine about trees, they were separated much further asunder, and sometimes without much regularity, according to the taste or fancy of the proprietor. Doubtless each rustic endeavored to exhibit his independence and gratify his own peculiar notions and whims in the planting and training of his vine, being quite as loftily conscious of his rights and importance as are any of the 40,000,000 of American sovereigns who are living twenty-five centuries later; but there are reasons for supposing that the vine was often trained upon trees where

the ground was an inclined plane exposed to the sun and having a calcareous or volcanic soil; for this would best secure the vine and fruit against the intense heat incident to such an exposure and such a soil.

From the numerous and fragmentary statements of the Greek and Latin writers who have discussed the subject, it appears that the methods of planting, training, cultivating and pruning the vine, and the rules for manufacturing and preserving wine among those ancient peoples of Greece and Italy were as various as those now in vogue among wine-growers, and not widely differing from them; save that the theories were less complicated, and the vine was allowed to grow more strictly in accordance with the dictates of nature. That grapes were successfully cultivated in Western Asia thirty-three centuries ago is conclusively proved by the authentic narrative concerning the cluster of Esheol.

As the vine is indigenous to the southern and western portions of Asia, and the southern half of Europe, including Greece, Italy and Spain, it is highly probable that the native variety was first cultivated in each particular locality. In due time improved varieties were gradually introduced from other sections, and the coarse native was forced to give place to the more highly refined foreigner. Accepting the testimony of the early historians, poets, and writers on horticulture, we conclude that the very choicest wines were produced in some of the Ionian Isles and in favored parts of Italy. Those spots were near the sea—a fact suggesting that the peculiar richness, flavor, bouquet, and mellowness so much extolled were due to the sea's influence. Among the Greeks, the places oftenest mentioned with affection because of the vines they produced, were the islands of Thasos, Lesbos, Chios and Cos; and the perpetual recurrence of these words in prose and poetry, wherever wine is the theme, furnishes evidence that writers, readers and hearers were keenly alive to the merits of the god so constantly in their minds and on their lips; and that they could make nice distinctions between wines of different flavors and ages. One might almost venture to affirm that any of those joyous old philosophers who were at all in the habit of attending public festivals or private banquets could name the year in which a genuine glass of wine was manufactured, provided it were not more than fifty years old. At all events they would cheerfully guess the age on being presented with an additional goblet: and it was their unanimous opinion that old wine was not only more grateful to the palate, but also more wholesome and invigorating. Nestor, one of the grand characters in the *Odyssee*, is found drinking wine ten years old. On other occasions, wine sixteen, twenty-five or fifty years old is set before the guests.

Among the Latin authors, Horace never grows weary while praising his fine old Massie and Falernian; numerous places in Latium and Campania were noted for the excellence of their conies, and thereby it came to pass that the sound of the proper adjectives, Caecuban, Fundanian, Setinian, Alban and Slatinian awakened lively emotions in the minds of poets, generals, statesmen and philosophers. Among the Romans, Cæsar, Pliny, Virgil, Horace and Cicero,—and among the Greeks, save the divine philosopher Socrates, were fond of good wine, drank it themselves and sanctioned its use, but were severely temperate and exceptionally faultless in character. Such a beverage was believed to be ennobling and not degrading to those who indulged moderately. It therefore becomes a matter of interest to know the art of making and preserving wine, and the rules for enjoying the presence of this social divinity so often counterfeited and so lavishly calumniated in modern times.

H. M. W.



The Dueberry or Trailing Blackberry.

A CORRESPONDENT in a P. S. to a business letter wishes to know if the above named fruit is indigenous to Iowa, or whether its culture is known in the State. The trailing or ground Blackberry, as it is or was usually called in New England, is an old acquaintance of ours. Its fruit there is of higher quality than that of the high bush-blackberry. It is not, so far as we know, found growing wild in this State ; we obtained plants from the east in 1864. It grows luxuriantly here, but produces no fruit. In New England it is generally found the most productive in the poorest soil ; it might bear fruit on the sandy, gravelly, knobby land, occasionally met with in this State. But it shows no fruitfulness on our ordinary soil. On the other hand, we find it an intolerable nuisance. It literally covers the ground with a net-work of vines, and appears to be no less tenacious of life than does the Canada thistle. Cutting up the vines two or three times during the season appears only to invigorate its growth ; our advice is to let it alone. We will thank any one to take what we have of it, and pay a premium for its eradication from our ground to boot.

Is Grape Culture and Wine Making a Failure in this Country?

THE direful effects of two sharp night-frosts at the end of last April, in the wine districts of France and Germany, causing the loss of no less than two-thirds of the presumable crop for 1873, together with the oft-repeated failures which assail the vintner of those countries, through early and late frosts, rot, mildew, insects—of which the Phylloxera is no mean individual, naturally raises the above question in the mind of Americans, who would prefer to rely upon the productions of their own country for a gentle and agreeable stimulant. I now propose to examine and answer it to the best of my observations and practical experience, for the satisfaction of my friends who desire to continue in this line of business.

There are a great many progressive undoubters who will be surprised by the caption under which I write. To doubt the ability to grow grapes and to make native wines is something beyond their comprehension, and smacks strongly of—let us say it—a great deal of ignorance, with what has been accomplished within the twenty years. I will say at once, to relieve their mind, that the question is not whether grapes can be grown and wine made, but whether it can be made to pay.

We know but too well that many have been severe losers, others utterly ruined in the laudable effort to nationalize grape culture and wine-making; yet, from experience, I sincerely believe it can be made to pay; in fact I know it. But before I can show how that result, in my estimation and experience, is to be reached, let us consider, briefly, the many causes which have worked detrimentally to retard or arrest the healthy growth of that new branch of business; knowing many of the causes which have been an impediment, we may in a measure guard against their repetition.

Let us begin with the vineyardist, and see the many errors in the vineyard. First, the difficulty to know whether he wanted a wine grape or a table grape for a handy market. The Catawba having already met with a certain success in some portions of the country, was chosen, and planted everywhere, at random—in low lands, side hills and table lands; the risk of the soil being unsuitable was freely taken, in many cases not even inquired into. To supply the demand plants were made of sound or diseased wood, as the case might be; of ripe and green cuttings; the same was done of the many new plants which carried public favor; and, worse than all, as soon as they began to grow they were made to furnish their own quota of plants, weak, feeble, worthless plants. Then they were subjected to a style of pruning, cutting, breaking, slashing, pinching, etc., which only proved the immense energies of the vine; the wonder was and is that they were not killed outright—but to finish them sure, deep plowing, tearing and mangling the roots out of the soil was resorted to, in and out of season, in times of drouth, with a dog-day sun, the soil being baked as hard as a brick—whilst a crop, double the size it should be, was making the reckless attempt to mature on well abused vines. And people wondered that their vines became sickly, subject to rather light frosts, rot, mildew, insects etc., and in many instances, within the last few years, failed to come up at all, utterly ruined, dead.

Next, with the vintner, the trouble was his inexperience in wine making; grapes not sufficiently ripe, unsuitable or musty barrels; then the pernicious theory of gallizing, which has done more to destroy the reputation of native wines than all or any other causes whatever; wine made with sugar and water, under pretext of reducing the acids and pungent or foxy flavor, making a beverage no longer containing the healthful element—in due proportion—intended by a careful and beneficent nature, and, unless with an excess of alcohol, no longer in a condition to keep, often turning sour on the hands of the vintner, or soon after he sold it, especially if the purchaser kept it on tap, like beer, without ice—which often proved to be the fact instead of having it bottled as all good wines should be. Add to this the natural, however absurd, prejudice of foreigners—our new made citizens, against drinking anything in the shape of wine that is native, preferring their own, often adulterated wines, simply because they are French, German or Italian wines; and our own people being sufficiently foolish to believe that no wine is good or fashionable unless it be European, preferring tea or coffee, the products of foreign climes, for a table drink, and common and poisonous corn whisky for a stimulant—and you have some of the many drawbacks which have caused thousands of acres to be returned to grass or corn. The picture is not certainly exaggerated. Let us quietly enquire

how it could be improved and made to pay? I have now in my mind an experiment which has been carried on for the last six years by an intimate friend, with intelligence to direct and means to establish, and I will refer to him and his vineyards to demonstrate the truths I wish to impress on my readers. The first thing that attracts the attention of the stranger is the admirable selection of soil and situation of these vineyards, known as the White Elk vineyards, and situated some three miles north of Keokuk on the bluffs which skirt the western shore of the Mississippi as far as Montrose, and facing the river, which they almost reach by a steep descent. The scenery of the country is very picturesque and presents a surface strongly rolling and naturally drained; this is no prarie with a level surface and a strong, black, rich vegetable humus, causing a rank vegetation. On the contrary the soil is of a light colored clay loam, with an admixture of sand from the sandy marls of the loess which forms that dry calcareous soil which a long experience has proven to be well adapted to the growth of grapes, as it also contains a sufficient quantity of the oxyds of iron, which ought never to be absent from those wines which have the pretension to be medicinal. There are seventy-three acres in grapes chiefly Conecord, Catawba, Clinton, Ives, Nortons and Delawares. The work is done under different squads of men, everything systematically and at the proper time; there is no slashing, breaking or even pinching done during time of growth; the pruning is done soon after the crop is gathered; the plowing and cultivation is thorough but of a light character; the soil is always loose and no weeds are suffered; and, in anticipation of mildew, the vines are regularly sulphured by means of De Lavorgue's bellows. No wonder that with this systematic care and treatment the vines are full of vigor and of fruit, notwithstanding the trying weather, and other miseries which vines have had to encounter for the past few years. As a vineyard it is a success; a very limited loss of vines and a great production of fruit, the Concord for a red wine, and the Catawba for a white wine predominating, they being without a doubt our preferred national wines.

The press house and cellars are a model of convenience and neatness; the same orderly spirit which commands over the vineyards is to be seen there; the cellars have a capacity of one hundred thousand gallons. It is the object and pride of the owner of these vineyards to turn out nothing but pure native wines. Dr. Gall has no footing there, the wines are real wines and not like a good deal of stuff in the market, a mere mixture of sugar and water. Those I tasted I esteem a pure well-made article, much to be preferred to many imported wines; they appear to contain sufficient body and the necessary quantities of acid so refreshing to the inner man on warm sultry days. Had such wines been made from the start in this country, instead of that shoddy article known as "gallized," native wines would stand far higher in general estimation than they now do, and only in this way will they have a chance to become appreciated, and resume their position as some of the fair and remarkable wines of the earth.

Most of the wine is neatly bottled, and is sold by the case, thus obviating the risk of having a good wine spoil through the ignorance or carelessness of the buyer; only to wholesale buyers who are known to understand the treatment of wines is it ever sold by the cask. Treated in this way alone will vineyards and native wines

pay. The small vintner has had his day; it requires means either single, as in this instance, or by association, to do the subject full justice, to command labor, skill, science and all the necessary machinery to deliver the wines to the trade or to consumers ready for consumption.

Our vast country certainly contains many an excellent position, and soil suitable for grape culture, the climate of this portion of the Mississippi Valley being temperate and healthful, sufficiently warm and genial. The time is probably not far distant when our long line of bluffs, on both sides of the river, will be mostly occupied by vineyards for the production of pure native wines; of grape brandy so preferable, in its moral and physical effects upon man, to common whisky; wine vinegar, so palatable and preferable to other forms of vinegar; of grapes for the table, and raisins which will be largely shipped to less favorable parts of the country, thus creating a safe, steady and important business, which will make of lands hitherto considered the poorest the most productive and valuable in this section of Iowa and Illinois, commanding as much per acre as the best prairie lands. The future lies before us; success is certain to follow the skillful and enterprising. It is certainly within our reach.—E. BAXTER, in *Rural World*.

Influence of Stock on Scion.

I HAVE been much interested in the notices given from time to time as to the influence of the scion on the stock, and *vice versa*. In the early viney here we have a couple of Muscat vines worked on the Black Hamburg, and in the same house we have a Muscat on its own roots. Those worked on the Hamburg started fully five or six days in advance of the one on its own roots, although they are nearly a fortnight behind the Hamburgs they are worked on, each of which has a rod of its own in addition to the Muscat worked on it. The stock would therefore appear to have forwarded the Muscat about a week; although I have never seen any difference in the ripening of the two, nor any effect on the fruit, yet the growth appears more robust and the leaves of better texture. In the late house we have a Hamburg worked on Lady Downe's. The Hamburg has shoots varying from three to six inches in length, in exactly the same stage as the other Hamburgs in the same house, while the rod of Lady Downe's filling the next rafter, on the same roots as the Hamburg has to draw its supply of sap from, is only just starting its buds; showing clearly, in this case, that the lateness of the stock has had no influence in retarding the earlier habit of the Hamburg.—*Gardener's Chronicle and Agricultural Gazette*.

TIME OF PICKING APPLES.—A writer in the New York *Tribune* tells us that G. W. Browning, of Luzerne county, Pa., some years since accidentally discovered that winter apples picked some five or six weeks before the usual time of gathering, would keep sound some months longer than those allowed to ripen on the trees.

Since that time he has picked his apples early, and reserved them for the spring and summer market, thus obtaining much higher prices than if sold in the fall or winter. Whether any effect upon the flavor and quality of the fruit was observable, is not stated.

Cherries in Michigan.

AT the June meeting of the Michigan State Pomological Society, Mr. H. S. Chubb read a paper on cherries, in which we find the following items of interest to Michigan fruit growers :

Of the twenty varieties of cherries mentioned in the appendix to the report of the Michigan State Pomological Society of 1871, only four or five have been proved profitable for market purposes in Western Michigan, so far as my observation and experience extend. While I would not recommend the extensive planting of varieties that have not been proved profitable, it is not amiss to have a few of the choice kinds for experiment. It is, however, with cherries as with strawberries and some other fruits ; the strong acid varieties are most prolific, the surest bearers for market and domestic purposes, the most profitable.

The choice, sweet cherries, although very desirable as table fruit, are not, in my experience, a very sure crop, and being subject to the depredations of the birds are seldom profitable, while the acid varieties are regularly good bearers, and being almost free from the attacks of birds and boys, generally remain on the trees until gathered. When thoroughly ripe they are of a very rich flavor.

The Early Purple Guigne appears to have become the variety in the southern portion of the Michigan fruit region, and its regular bearing and its good flavor render it an excellent and profitable variety. Of the sweet cherries, I presume it is the best that can be cultivated profitably in this region of the State, so far as ascertained.

The Early White Heart is a small sweet cherry, valuable for its earliness, but not desirable for extensive planting on account of its smallness.

Kirtland's Morello is a short-stalked variety, but I have failed to discover any superiority in it over the common Morello. In fact I did not find it a sure bearer. One objection to it is the smallness of its leaves, a serious defect in a climate subject to early scorching sun. The fruit forms before the leaves protect it and the sun scorches the fruit, stunting its growth and causing a loss of a large portion of the crop. One advantage of the Morello cherry over all others, I think, is its adaptability to a northern aspect. It will flourish in almost perpetual shade, and can be planted on the north side of a wall, house or barn with decided advantage.

Mr. F. R. Elliott, of Cleveland, in the report of the Department of Agriculture for 1867, describes several varieties of cherries not mentioned in the list of our society just referred to. Of these the Kirtland just mentioned is one, and the Archduke, another. The latter he describes as the best of the Duke cherries. I presume the late Duke mentioned in the society's list, may be the same variety, but Mr. Elliott claims that is incorrect, and it bears early in July, and cannot be called a late variety. The Archduke is described as "large, round, heart-shaped, compressed, dark, shining red ; stem, long and slender; flesh light red, slightly adhering to the pit; tree vigorous, healthy upright grower, with long, broad, oval, dark, rich green foliage, slightly serrated, and the petioles a little bronzed. In sections where the more tender class of sweet cherries fails to succeed, this variety supplies a want and offers superior claims to cultivation. The true variety is somewhat

rare, as the common Late Duke is often sold for it." From this description I think the Archduke would be a very desirable variety for this region of country. Its dense foliage would aid very much in securing the perfection of the fruit in our usually dry June season.

The Ohio Beauty is another variety spoken of by Mr. Elliott, not mentioned in the society's lists. It is described as 'large, round, obtuse, heart-shaped; suture, slight; color yellow light ground, mostly overspread and somewhat marbled with dark rich and pale reds; stem rather long and slender, and set in a deep open basin; flesh yellowish white, tender, juicy, delicate, sweet, with a rich, fine sprightly flavor, pit small, oval; season, last of June. Tree healthy, hardy, vigorous, rather a short jointed grower, forming a round, open-headed tree, comes very early into bearing and produces abundantly. Originated by Mr. V. P. Kirtland, of Ohio, in 1843.' Mr. Elliott states that as far as he could learn, it has proved superior to the claim made for it by its originator. In no place that he could learn of, has it ever shown any sign of disease, and it is reported as being grown successfully where the Black Tartarian and Elton have failed. I should judge from the description that the Ohio Beauty would be a valuable acquisition to the varieties of the Michigan Lake Shore region, and recommend its trial. It is so large that it would, as a light colored cherry, be greatly preferred to the White Heart, and its leaf, although not so large as desirable, is perhaps sufficiently large for all necessary protection.

The light sandy soil of our Lake Shore region appears to be peculiarly adapted to the cherry tree, and the cool climate of the Lake Shore is peculiarly a cherry atmosphere. I should prefer shade and protection from too much sun as a general thing for producing perfect cherries, as the slower in arriving at maturity the larger and better is the fruit.

The planting, pruning and cultivation of the cherry differ but little from those of the peach, and no special directions are needed to a society composed of peach-growers. The cherry is so much at home in Michigan that nothing but ordinary care and culture are necessary, and no tree perhaps suffers so little from neglect as the cherry. It will grow on the roadside, on the lawn surrounded by grass, or anywhere where an ordinary maple tree will grow, and thrive as well.



Cherries in Southern Ohio.

AT the April meeting of the Cincinnati Horticultural Society, Mr. Keller said that he had three varieties of cherries which did remarkably well with him, at his place near Miamiville, viz.: the Black Tartarian, the Early May and the June Duke. He also alluded to the early purple Guigne as a good and profitable kind. It ripens very early; is a good bearer, and is nearly black when fully ripe. Mr. Jackson had four varieties of cherries which did well with him. The May Dukes (the kind here spoken of); the Black Tartarian; the English ox heart, and the early May. Mr. Price made mention of a magnificent cherry tree of great age, which he had seen growing on bottom ground, nine miles from Cincinnati, in Kentucky. It was sixty-four feet across the lower part of the branches. It was always loaded with fruit when cherries were not killed by frost.

Pear on the Thorn, Imported vs. American Pear Stock.

BY B. A. MATHEWS, KNOXVILLE, IOWA.

ED. WESTERN HORTICULTURIST:—In regard to Bartlett and F. Beauty, on the White Thorn, I have quite a number of fine, large trees of each sort. Some of them are grafted into the limbs of large thorn trees, others again I sawed off five or six feet from the ground and then grafted the new shoots. I have ascertained that they should, by all means, be allowed to grow two years after being sawed off in this way, in order to obtain vigor and thriftiness, otherwise the stock is apt to fail sooner or later, thus, of course, killing the entire tree. Again, by keeping the Thoru tree closely pruned, after grafting in the limbs, it will die. Again, one or more limbs of the Thorn may fail from too close pruning, thus giving the appearance of blight. Some, perhaps, without investigating, would think it was blight, still I am satisfied I have had more or less limbs on my trees to die of blight. When blight attacks a limb it does not, necessarily, injure the tree much, merely confines its ravages to that particular limb, descending only till it comes to the Thorn stock; it can then be removed without damaging the rest of the tree. I have not thus far been damaged any of consequence by blight.

If I had known many little things when I commenced grafting on this stock that I know now, I could have many more trees than I have; for instance—experimenting with fifty or more varieties, but few of which would do on the Thorn; grafting many others the first year after sawing off; keeping others too closely pruned, not allowing them leaves enough to elaborate the sap thrown into the tops of the trees, thus killing them out. In this way many valuable stocks were lost, and much labor and expense incurred that I could avoid now. I would not graft but very few varieties of the Thorn out of all I have tested.

In orchard nearly all my trees are on Pear stocks, imported from France. Would have no trees on American stocks. This idea might not be popular among some nurserymen, but I notice some of the leading American nurserymen are advertising trees on foreign stocks for sale this fall, Hanford, of Columbus, Ohio, among the number. He has found out that he can raise trees successfully on no other stock. M. B. Batcham, his predecessor, tried many years to raise Pear trees, and expended thousands of dollars without accomplishing anything. The point, though, is not simply to raise trees in nursery, but in orchard.

I have never yet seen a sound and perfect American Pear stock, while foreign ones are as pure as could be desired. No nicer trees can be raised than may be grown on Mountai Ash, but what are they worth?

I believe in *Anger's* Quince for dwarfs. No other Quince will answer. For standard imported Pear stock, no other Pear seedlings for me. It might be well to experiment with Mountain Ash, Thorn, Juneberry, etc., much might be learned by it.

GRASS AND CULTIVATION.—Mr. W. Parker, Vinton, writes us: “There are some things in my observations among the orchards in this region inexplicable. One orchard in cultivation is badly injured, another near by in grass not damaged—another orchard under the best of cultivation in perfect condition, and a neighboring orchard in grass badly killed out.” Who can reconcile these strange results of grass and culture?

Pears—to Prevent Rotting on the Tree.

TO an inquiry in the Southern *Cultivator*, for a preventive of rotting of the pear upon the tree, and to cause it to ripen up, W. A. James, Bishopville, S. C., says, "strip the bark entirely off the bodies of his pear trees, on the 20th of June, he will find that most, if not all, the crop upon them will ripen that season. Be careful not to scratch the wood with the instrument used in starting the bark, as it will make an ugly scar in the new bark, which will form in a few days after the old one is removed. I generally start about two feet from the ground, and strip both up and down, letting it run up the limbs as far as it will, and as deep into the ground as it can. There will be no risk of killing the trees, if done at the time indicated.

"I stripped the bark from a pear tree on the 20th June, 1854. It was still living when last heard from. I have performed the operation repeatedly, but the new bark grows back so soon and the tree looks so natural, that unless you particularly mark it, it would be impossible ever to tell it again. I once had a large nectarine tree that bore full invariably, but never matured any fruit, until after it was barked. That year it ripened all the fruit. The next year it was full of healthy fruit again, but a storm during the summer up-rooted it, and I lost it. I hardly think the barking process will shorten the life of a tree, but if it did, it would be better to enjoy some fruit than none at all."



Pruning and Thinning.

ED. WESTERN HORTICULTURIST—In the June number of THE HORTICULTURIST, I noticed an able article on "pruning and thinning." If I had dictated that article it could not have met my view upon the subject of the pruning man more fully. The article is just what might be expected from the source from which it emanated, I am satisfied as to the good results of properly pruning fruit trees. I have a nurseryman's catalogue before me, in which he facetiously denounces pruning a "propensity to whittle." I am always glad to read a well written and sensible article on any subject concerning fruit growing; I say ditto to every line of your article, its teachings are in accordance with my own experience of many years.

Cedar Rapids, Iowa.

T. PADDINGTON.



HOW THE DOCTORS "DEW" DISAGREE.—At a meeting of the Alton Ill., Horticultural Society, Mr. Hyde took decided issue with Dr. Hull on the apple question; would not raise a Newtown Pippin—could get two bushels of Willow Twigs where he could get one bushel of the Pippins; was in for the paying apples; Willow Twig would fetch double the money, though inferior in quality.

Long: Had trouble in selling the Newtown Pippin before its quality was known, but now it sold with him more readily than any other apple.

Starr: Found no money in the Newtown Pippin—Ben Davis filled the bill with him.



Editorial Notes.

Better than Expected.

The Rhododendron display on Boston Common, last spring, was more successful, financially, than we supposed. Over \$7,310 were realized, and of this \$1,534 was clear profit, which was presented by Mr. Hunnewell to the Treasury of the Massachusetts Horticultural Society. This is a good showing.

The Martha Grape.

Fruit coming from Virginia, of this variety, have been selling for twenty-five cents per pound, very steadily. The commission men are confident it will always bring a good price, no matter what its flavor may be.

The Ives Grape.

This grape is becoming very popular with dealers. It proves to be a better shipper than the Concord, the flesh is more firm, not so likely to break, and will carry further into the interior. Buyers will always prefer to get the Ives as long as it lasts, and with Concord, side by side, the Ives will always be sold out first.

National Horticultural Society.

Quite a strong feeling now prevails among horticultural circles, to assist in the formation of a National Horticultural Society, to hold its session in alternate years with those of the American Pomological Society. Many have mentioned this topic to us, and at Boston, during the session of the American Pomological Society, the idea was broached with considerable force. We would, personally, be glad to see such an organization created, and handsomely supported. It seems to be imperatively needed, for it has a sphere of wide use and influence, and in no sense will it conflict with the claims or the popularity of the American Pomological Society. The latter mainly confines its attention to fruit. The other aims only at a consideration of the more ornamental portion of horticulture—flowers, trees, plants, gardening, etc. We believe most of the working members of the American Pomological Society would join the new organization, and we think superior talent could be called out to properly officer it, and give it dignity, literary character, and an extensive influence. We would propose for such an organization the name of S. B. Parsons as president, and Josiah Hoopes as secretary. Such a force will draw popularity everywhere.

New Pear, Souvenir du Congrès.

Specimens of the fruit of the new Pear were recently forwarded to us by Ellwanger & Barry, of Rochester, N. Y. They ripened in the house, after keeping two weeks, and developed a fine golden color, with touches of crimson on the cheeks, producing a very handsome and attractive appearance. The Pear is very large,

nearly as much so as two average Bartlett's put together, have very tough skin, and from this fact, we would judge it to be very excellent for market, standing shipping finely. The flavor is only fair to good—not as juicy as the Bartlett. As it ripens one week before the Bartlett, we judge this to be its principal value and recommendation. The tree, as we have seen it in various places, is a good grower, healthy, and we judge, will be very productive. We would class it as a very fine early market pear to ripen before the Bartlett.

Essays before the American Pomological Society.

It is our purpose to publish in THE HORTICULTURIST all the Essays presented at the last Session of the American Pomological Society, in Boston. One or more will appear in each number until all are published. Many of them are valuable, and we think no one will regret the space we give to them. Those on Pear Blight are particularly instructive. The public will learn with pleasure that the Hon. W. C. Flagg, of Illinois, Horticultural Editor of *The Prairie Farmer*, was appointed Secretary in place of F. R. Elliott. In the absence of Mr. Flagg, by sickness, the Editor of THE HORTICULTURIST was appointed Acting Secretary for the session.

Any who have information or papers they wish submitted for publication in the reports of the American Pomological Society, can transmit them to this office, or to Mr. Flagg, Mr. Barry, or Mr. Wilder, and they will be acted upon by the proper committee.

Pronunciation of Names of French Roses.

Quite a number of Roses with French names are now cultivated in America, and yet few know how to pronounce their names correctly. We here give the names of those best known:

Name.	Pronounced.
Alfred Colomb,	Ahl-frod Colong.
Charles Verdier,	Charle Vare-de-a.
Charles Lefebvre,	Charle Lehfavre.
Comtesse Chabrilant,	Contess Shar-bree-yong.
Eugene Appert,	Eoo-jane Appare.
Eugene Scribe,	" Screeb.
General Jacqueminot,	Jan-a-ral Jark-me-no.
Jules Margottin,	Jule Margottang.
Marechal Vaillant,	Mar-aè-shal Vay-yong.
Meyerbeer "	May-yare-beer "
Sombrieul "	Sombreool "

Growing Cranberries.

A subscriber having asked us what were the cost and profits of Cranberry culture? We answer him as follows: 1. A good cranberry marsh must be made out of boggy, peaty land; sand must be carted upon it to the depth of six inches, and then the plants set out. The bed must also be so situated that a stream of running fresh water may be turned upon it at proper times to flood them entire, to prevent attacks of insects or frosts, and be as quickly shut off and drained. 2. The lowest cost per acre is \$300 for a bed well prepared. From this upward to \$600 and \$1,000 per acre have often been expended. 3. The yield in bushes increases gradually, from twenty bushels the first year, up to 100 or more in the fifth year. Average price of cranberries \$3 per bushel to the producer. It requires three years' time to get a good bed well planted and in producing condition, and the income is from \$60 to \$200 per acre for three years after that; after the sixth year, \$300 to \$600 per acre.

Horticulture as an Ally of Agriculture.

One of our exchanges says: In the public mind there is some confusion in regard to the respective missions of horticulture and agriculture. A recent writer has put the case this way: Horticulture does not begin where agriculture ends; but one takes

its start from our necessities. We are to get our bread by the sweat of our brow. The other starts from our mental life, and goes down to meet our physical wants as represented by farm culture. Be this as it may, horticulture, even in this transcendent sense is a great aid to agriculture. The principles of plant-life ; the sciences connected with culture ; thousands of little experiments connected with great practical results, are much more likely to originate in the garden than on the farm, and for which the farm is largely the debtor. To a certain sense agriculture acknowledges its indebtedness to its intelligent sister, for while the horticultural exhibition rarely condescends to include objects of pure farm-life, the agricultural fair takes in all fruits, flowers and ornamental garden work.

Cure for the Mealy Bug.

J. M. Jordan communicates this practical information to *The Gardener's Monthly* that *alcohol is a cure for the Mealy Bug*. He says he has removed these pests from thousands of the most delicate stove plants without injury to the latter, simply by applying frequently, for a few weeks, "alcohol diluted with five per cent. of water." The most convenient equipment, he thinks, is a fine brush put through the cork of a wide-mouth bottle.

Large Tomatoes.

A gardener near Irvington, N. J., has succeeded this year in raising Trophy Tomatoes of enormous measurement. One cluster of eleven, on one branch, weighed thirteen pounds nine ounces ; a single specimen measured $25\frac{1}{2}$ inches and weighed three pounds.

Congress of Rose Growers.

A grand Congress of Rose Growers was convened this summer, at Lyons, France and met with excellent success. New varieties seemed to receive little favor, for out of fifty shown only four were deemed worthy of recommendation.

To New Subscribers.

Any who can influence new subscribers to THE HORTICULTURIST are informed that, by subscribing now, the remaining numbers of this year, with all of 1874, will be sent for \$2. Copies, in clubs of two, for \$3.50, and three for \$5.

Are Dwarf Apples Desirable.

The Tribune, in discussing this subject, virtually admits that they will not pay for market purposes, but in the private garden, nothing in the way of fruit trees is more ornamental than a finely formed specimen of dwarf apple in full bearing. The fruit is always of larger size and more beautifully colored than when grown on the usual free root, and therefore, for exhibition purposes, they must excel. Some growers prefer their trees worked on the Paradise apple, thus making a smaller tree, and one that is more readily kept within proper bounds ; but, says the nurseryman, the plants are so small and trifling that our customers want something more showy for their money, and we are in consequence obliged to use the Doucain root, which enables us to grow a larger tree within the same space of time. But this larger size is at the expense of quality, for nothing but severe root-pruning will keep them within proper bounds. The borer is more severe on the Dwarf root than on the Standard, and must be closely watched ; branches should have an annual shortening in ; roots must be curtailed ; and, lastly, the soil should be enriched every season. Thinning out the fruit is an absolute necessity ; bearing in mind that we want only extra fine specimens, therefore the inferior sized fruit must be taken off before we commence removing those well shaped. Now what kinds shall we plant ? The most satisfactory is derived from Summer and Autumn varieties, as we grow them for pleasure more than profit, and only those should be selected which are handsome in appearance.

Floral Notes.

Culture of Lilies.

A correspondent of the *Rural New-Yorker* has been very successful with lilies planted in a deep bed formed of rotten sods, gravelly loam, leaf mould and a small portion of rich compost. While the buds are growing, the bed is watered with weak liquid manure. A single bulb of *Lilium auratum*, undisturbed for four years, had increased and borne more than seventy flowers. The varieties of *L. lancifolium* had also succeeded finely, and given a profuse bloom.

The Perfume Crop.

The *London Garden* quotes Dr. Schomburgh's report on the Botanic Garden at Adelaide, Australia, for the statement that 150,000 gallons of handkerchief perfume are consumed yearly by Europe and India, and the revenue from imported perfumes in England is estimated at a quarter of a million dollars. The immense material used for these scents are jasmine, mignonette, verbena, rose, heliotrope, rosemary peppermint, violets, orange, etc. One acre of jasmine has produced over a thousand dollars; violets, eight hundred dollars; and other plants largely, but less in amount.

Sweet-scented Tulips.

A writer in the English *Journal of Horticulture*, speaking of the sweet-scented Tulip, says: "I last week had the pleasure of inspecting at Laurel Bank, the picturesque villa residence of A. Stirling, Galashiels, an unnamed sweet-scented Tulip, the like of which I do not recollect having met before. Tulips usually are void of any pleasing odor. None that I am acquainted with merits being classed with sweet-scented flowers. This at Laurel Bank is equal in fragrance to the finest-scented rose. Mrs. Stirling, who is a great lover of flowers, and a good judge of them as well, told me she preferred it for the delicious perfume which it emitted, as a cut flower in the rooms, before any rose. It is growing in an outside border in rather a shaded position, where it was placed some years ago. In form the bloom is semi-double; in color an orange ground prettily striped with chocolate. It would be much appreciated in our conservatories and room vases, or wherever odoriferous flowers are in demand."

Training Vines over Windows.

A lady writer in the *Rural New Yorker* asks why the people, both in city and country, do not train vines over their windows. "What is more beautiful than green leaves falling around the casement in graceful festoons? Grape vines clambering over a trellis are very fine; but, if a grape vine is out of the question, the next best thing is a hop vine, that being free from the objectionable creepers that push out from woodbines and attach themselves to clapboards and shingles. I have a luxuriant hop vine now, which requires no care save a dish of suds poured upon it occasionally, that shades two of my kitchen windows; and the cool tendrils cling so closely to the house, with the aid of a friendly nail and string here and there, that it makes closing the windows, even in a storm or shower, wholly unnecessary, securing a capital ventilation of the room both day time and night. And there is such a silky, sociable rustle of the leaves all day, that I like to sit close up to them and listen to what they say, as I have a notion that everything has a voice and language of its own. Then fill a few vases with roses, and place them out on the window sill; and the green background makes a delightful, reviving picture."

Care of House Plants.

A lady in Kansas gives her plan of caring for house plants, as follows: "I live in a frame house, and last winter kept fifty pots of different kinds of geraniums, roses, fuchsias, and remontant pinks, all of which received the same kind of treatment, and in the spring my plants were more healthy and the leaves a dark green color.

Many came to me for slips in preference to the greenhouses. Every two weeks all the winter I would take a handful of tobacco stems and steep them by pouring boiling water over them until it looked like strong tea, then, when the tea cooled enough to bear the hand, I poured it over the plants. Sometimes the leaves would wilt for a few moments and then straighten out and have that bright fresh look they have in summer after a shower. Then I would weaken the tea a little more and wet the ground in the pots, and I have no red spider nor green fly."

Solution for Destroying Insects.

Mr. Cloez, of the garden of the Paris Museum, gives in the *Revue Horticole* an efficacious recipe for destroying plant-lice and other insects. Three and a half ounces quassia chips, and five drachms staves-acre seeds, in powder, are placed in seven pints of water and boiled down to five pints. When cooled, the strained liquid is ready for use, either in a watering-pot or syringe.

Pond Lilies Easily Cultivated.

Phineas Field, of East Claremont, writes to *The New England Farmer* as follows: "If you admire pond lilies (and who does not ?) and have a springy place in your mowing, by digging a hole so that the water will stand from six to twenty inches deep in the same, and by setting roots in the bottom, you may have a supply of fresh ones through the season of blooming. Old roots will blossom the first season. One half day's digging, four years ago, has supplied me abundantly, and now I have hundreds of young roots."

Difference in Exposure.

A bed about ten feet across cut in the lawn was planted with tulips and hyacinths. In spading manure into this, fall and spring, it had become raised, so that when the surface was rounded off the center was some eight inches higher than the circumference. The same kinds of bulbs were planted all around, and while the hyacinths upon the south and east portion were in full bloom, those upon the north side were just opening, there being one and two weeks' difference caused by this slight elevation.

A Glowing Picture.

A lady writer from the Isle of Singapore gives the following glowing picture of tropical flowers in "Fruits and flowers of the Tropics," published in *Lippincott's Monthly*: "We gathered whole handfuls of the Lotus or Water Lily, with its pale blue, golden or rose-tinted blooms gleaming up from the sparkling waters. There are many varieties of this exquisite flower—blue, pink, carnation, bright yellow, royal purple fringed with gold, and more beautiful than all, pure virgin white, with the faintest possible rose tinge in the center of each section of the corolla, a just perceptible blush, as of its own conscious loveliness. The last is the royal flower of Siam; borne before the king at weddings, funerals, and all state festivals, and the royal reception rooms are always beautifully decorated with the young buds arranged in costly vases of exquisite workmanship. In moist portions of the jungle were whole groves of fragrant pandanus, ferns of infinite variety, a species of wild mignonette, spotless japonica, fragrant tuberose, cape jessamine, wild passion flower, the calla India, with its five long petals of heavenly blue, then the innumerable company of roses, tea, moss, perpetual, cluster, climbing, variegated, and a score of others, queenly still even amid such a gorgeous array. The Victoria Regia and Rafflesia Arnoldi, the two largest flowers in the world, we saw in Dr. A.'s garden—the flower of each two feet in diameter. Rarest of all was the night-blooming Cereus. There were six blooms in full maturity, creamy waxen flowers of exquisite form, the leaves of the corolla of a pale golden hue, and the petals intensely white. Its wondrous perfume is exhaled just at nightfall, and readily discernible for a mile. The odor partakes largely of that of lilies, violets, tuberose, and vanilla. It reaches perfect maturity about an hour before midnight; at three o'clock its glory is beginning to

wane; at dawn it is fading rapidly; and by sunrise only a wilted, worthless wreck remains."

A New Style of Pansy.

The London *Journal of Horticulture* says: M. E. Benary, a horticulturist, at Erfurt, announces a new Pansy, which has large flowers of a splendid ultra-marine blue, with a well formed eye of very deep violet-purple. They are also of good substance, have strong stalks and stand well above the leaves. M. Benary has named it *Viola tricolor, var. maxima Emperor William*, and states that the variety reproduces itself with certainty from seed.

A Poisonous Plant.

A few years ago there was in the Royal Botanical Gardens, at Kew, a specimen of probably the most poisonous plant ever introduced into England. It was the *Jatropha urens*, the properties of which are so noxious that its possession is positively dangerous. The ex-curator of the gardens was one day reaching over it, when its fine, bristly stings touched his wrist. The first sensation which he felt was a numbness and swelling of the lips; the action of the poison was on the heart, circulation was stopped and he soon fell, unconscious; the last thing he remembered being cries of "run for the doctor." Either the doctor was skillful, or the dose of poison injected not quite, though nearly, enough to cause death; but afterwards the young gardener, in whose house the plant was placed, got it thrust into a corner, and would not come within arm's length of it. He watered the offender with a pot having an extremely long spout. In a short time, however, the plant disappeared altogether, and another specimen of the genus *Jatropha*, which was afterwards introduced, vanished in the like mysterious manner. It was presumed that the attendants were secretly determined that such plants should not be retained in the houses, to cause the possibility of an accident such as that which happened to their curator.



Fruit Notes.

Destroying the Coddling Moth Worm.

Dr. LeBaron says, in the *Prairie Farmer*, that half and probably more than half the apple worms have escaped from the apples before the apples fall; hence he thinks the importance of picking up these apples or of allowing hogs to run in the orchard, has been overestimated. As to another mode of destroying these worms, he says:

"Soon after the young worms have entered the apple, which they generally do at the calyx end, they begin to throw out their castings through the hole which they made in entering. As this hole must be originally very small, it is evident that they must enlarge it for this purpose. A portion of these castings adhere to the rough and shriveled calyx, forming a rust-colored mass which can be easily seen from the ground beneath. Some horticulturists, among whom we may mention Mr. Oliver Chapin, of East Bloomfield, N. Y., and Mr. L. Barnes, of Bloomingdale, Ills., have availed themselves of this circumstance for the purpose of removing the wormy apples from the trees before the worms have escaped. Mr. Chapin's plan is to beat off the wormy fruit, but Mr. Barnes adopts the method of picking them off by means of a wire hook attached to the end of a pole. These methods can be usefully combined by first jarring or beating off those apples which readily fall, and then going over the trees a second time with a pole and hook. The apples thus removed should, of course, be fed to swine, or otherwise treated so as to destroy the worms within. Too much value cannot be attached to these simple expedients, which, in the case of a few choice trees, or even a small orchard, might almost be made to supersede the necessity of any other treatment."

Layering Grape Vines.

After giving a correspondent directions for layering vines, the *Farmer and Gardener* says, we would, however, caution our readers as to the danger of layering too much of the wood of a vine. Nothing exhausts the latter more rapidly than layering. It will reduce the crop of fruit for the ensuing year, and weaken the vine for years. From our layering vines we expect no fruit, nor more than three or four years of life. Never layer a bearing vine if you wish to keep it healthy and productive.

To have Apples every Year.

A correspondent of the New York *Tribune*, tells three ways of having apples every year. We give them for what they are worth, although we do not consider them infallible—No. 1 is certainly not to be depended upon—and No. 3 is to be demonstrated before we believe:

1. Take scions from a tree in 1873 and put them into a good thrifty tree, and do the same in 1874, and you will get fruit in alternate years.

2. If you cut off the thrifty trees the growth of 1873 in the last of June, leaving three or four buds that would come out in 1874, you would force out the next year's buds and gain one year.

3. If you remove all the blossoms on one-half of your trees in the bearing year you will have fruit on that half the odd years. These things I have done successfully. I have now in bearing the Victory apple of the odd year produced in this way; next year the scions of the last year will bear in the regular order.

Ashes in the Orchard.

D. W. Kauffman, of Des Moines, Iowa, writes to the *Iowa Homestead* that ashes are worth one dollar per bushel to put about fruit trees, and that he would not sell his ashes at that price and do without their use in the orchard. He has used ashes about fruit trees for fifteen years, and during that time has never seen a borer where ashes were used. The borer is a terrible pest to the fruit-grower, and if all other impediments to successful growing were as easily overcome and completely controlled as the borer, then fruit growing would be very successfully practiced.

At the recent meeting of the Fruit-growers' Association of Ontario, Mr. Moodie stated that he had been in the habit of using unleached ashes as a manure for his fruit trees, and that he values them more highly for this purpose than barn-yard manure. If our farmers knew the value of wood ashes for the garden and orchard and farm, they would not sell them for a few cents per bushel. The ashes that they barter for a few pounds of soap would, if applied to the soil, so increase their crops of fruit and grain as to yield ten times the value they now get for them.

Mulching Fruit Trees in Autumn.

There is no general or sweeping rule which can be applied to manuring and stimulating trees. Some are already in a thrifty, rapidly growing condition, and do not need any pushing; others are stunted, feeble or exhausted, and it is important that these be assisted by manuring. Every cultivator will readily perceive, by an examination of the annual shoots, what is the proper treatment to be given to his trees. Young trees which have made a summer's growth of three feet, more or less, or bearing trees with annual shoots a foot or two long, are growing fast enough. But if the shoots are not over a foot on young trees (and they are often seen only a few inches), and only half that length on older ones, they need special attention.

There are two causes that operate in retarding vigor. One, and a very powerful one, is neglecting the ground and allowing trees to grow in weeds and grass. Unless the soil possesses great natural fertility, this want of clean culture will operate strongly against them, especially if the tree be young or newly transplanted. The other retarding cause, is bearing heavy crops. The only remedy for this feebleness,

to be applied at this season of the year, is a top-dressing of manure, to give the trees an early start next spring. The earlier in the autumn that this application is made, the better will be the result. The autumn rains will wash out the soluble parts and carry them into the soil; and the fibrous portions of the manure which remain will protect the surface of the earth from severe freezing in winter. This topdressing is useful even if applied late in autumn, or even after the ground is frozen.

The objection which we sometimes hear, that the manure will wash away on frozen ground, contradicts itself. For if the weather is warm enough for rain to fall, or for snow to melt, or for the thawing of the manure heap, it will at the same time be warm enough to thaw the surface of the ground, and enable it to absorb all the fertilizing portions of the liquid manure. We speak from our own experiments, and never in any case could discover that this washing extended beyond the roots of the trees.

Cranberries in Massachusetts.

A company was formed a few years ago to raise cranberries on a certain field of marsh land purchased as adapted to that culture. One hundred acres were purchased for \$23.

About 22 acres, including a part of two of these swamps, have been prepared by ditching, turning over the turf, and covering it about seven inches thick with gravel and then setting out the vines about a foot apart each way, the work being all under the charge of the Brothers Stockwell. Last autumn they gathered from these 22 acres over 400 bushels of cranberries, sold in Millbury, Worcester and Webster for \$10.50 per barrel, three bushels to the barrel. The yield in some places was very large, 15 bushels being picked from one square rod, and 15 square rods yielded at the rate of 330 bushels per acre. A plot of six acres yielded at the rate of 325 bushels per acre; 15 or 20 men, women and children, were engaged in picking at two cents a quart, many earning two dollars a day. One man picked four bushels in a day. It is expected, when the ground is well covered with vines, that the yield will be much larger than it was last year. There are three dams and a reservoir. When there is any danger of a frost, all the ditches that surround the squares in which the plots are laid out can be at once filled with water, which prevents any injury to the fruit and vines; and all can be easily flooded through the winter, which not only protects the vines from freezing, but saves them from the cranberry worm. The company had last autumn expended \$18,000. But experience will enable them to prepare the rest of the ground at a much cheaper rate. They have 75 acres, out of the 100 purchased, suitable for cranberries. They have cultivated four different kinds of berries, viz., the Kirke Fiske, which is the earliest, the Cherry, the Bell and the Sutton, which is the largest and the handsomest, but is the latest.

Best Morello Cherry.

The Cleveland *Herald* says, that the Louis Phillippe is the best of all the sour or half sour cherries. Downing, in his great American Encyclopedia of fruits, says the fruit is large, of a rich dark, almost purplish black red, with a red flesh which is juicy, tender, sprightly and mildly acid; quality very good or best. Free, vigorous and very productive. Barry in his *Fruit Garden*, says it is ripe from the middle to the last of July, and is a very valuable sort for dessert, canning, cooking or market.

Pear Trees and Oxide of Iron.

The *Scientific American* says, the practice of mixing iron scraps, filings, or drilling chips from machine shops, in the soil about the roots of pear trees, is becoming general with some of our best fruit-growers. The health and productiveness of the trees are greatly promoted thereby. Pieces of iron hoops, old scythes, and other useless bits of iron, have long been used by the most successful growers.



ORCHID HOUSE, at Hillfield, near Reigate, England.

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Garden Topics.

Colors in Planting.

IN our modern American gardens, our latest and strongest aims now seem to be, to gain *color*, as well as beauty of forms in our plants. Subtropical gardening is exactly adapted to our climate; our brilliant skies and glorious sunny weather give a possibility and appropriateness to the use of high-colored foliage plants; and trees of rich hue become *mammoth painting* on our lawns and in our flower gardens. In *The Garden*, a correspondent discussing this subject, says justly, *garden scenery is brightened immensely by means of color*. "The leaves of the new-born summer, the matured ones of autumn—how much they owe to delicate and multitudinous coloring! But for fresh tenderness of touch, that neither painting nor word-coloring can reproduce, commend us to the bursting buds of April—the newly unrolled beauty of May leaves. Among these, what more beautiful than the beech and the purple leaved filbert? There are two or more varieties of each, one larger and of more substance than the other. In fact, of the beech there are many varieties, for the red reproduces itself from seed, and in a batch of seedlings there are tints of many degrees, ranging from dull greens to those of almost fiery glow. We have, however, never yet seen a seedling to equal in brilliancy the common variety, which is mostly increased by grafting it on the common beech; and another with larger leaves, that keeps its color later in the autumn. But purple filberts are easily multiplied by means of suckers—a mode of increase not always to be depended upon in purple beeches on their own roots. Beeches seldom produce suckers, yet they occasionally throw little bunches from the surface roots, and I have seen these green on purple seedlings, and purple on grafted plants—rather a singular circumstance. The filbert is also so fully purpled over and through that we never remember to have seen it throw out a green sucker. It is most useful in shrubberies, contrasting admirably with such plants as lilacs, laburnums, guelder roses, deutzias, etc. It seems actually

to glow with the intensity of its coloring, and is to the fore and middle ground of shrubberies what the taller beech is among other trees. The beach has a soft fluffiness and semi-transparency about it that the filbert, glorious as it is, lacks; and the richest coloring treat—a very feast of glowing magnificence—is spread around every far-reaching purple beech. One of the best modes of enjoying it to the full is to put the trees between the beholder and the sun, and look through the leaves towards him soon after he has risen, or a few hours before his setting. The purple is thus flooded with golden magnificence, and each leaf and branchlet is set off to admirable advantage. Purple beeches are especially rich as foreground to masses of green oaks, elms, or other deciduous trees; or set against larches, birches, or limes, the light foliage of these or the flowers of service trees, wild crabs, pears, apples, etc., give a deep tone to the glowing purple. Further, the young leaves especially, contrast admirably with most conifers; though it must be admitted that the darker hues of the purple beech in autumn become too sombre accompaniments for most pinuses. The place for the purple beech is the background of shrubberies, home plantations, belts, the park, and even the woods and forests; for the purple beech is not weakened by its color. It grows as fast, and forms timber neither better nor worse than any other beech, and assuredly its more general use would give a glow to forest scenery that would add much to its beauty, and to the breaking of its dead monotony of color as well as form. Clumps of purple beech here and there would change the face of our landscapes, and render them more agreeable without their being one whit less profitable. What with our want of direct sunshine, and our dripping clouds, and leaden skies, we have often a deficiency of cheering color, and there could hardly be an easier and cheaper method of supplying this want than the planting of our copses with groups of purple leaved filberts, and our woods with purple beeches.

The New Roses.

A correspondent of *The Garden* says the following are the best of the new roses, brought out in England this year: "I must give the palm to Hybrid Perpetual, *Star of Waltham*; a seedling raised by William Paul, of Waltham, Cron. This is a very fine pale, bright red-colored flower, very full, with great depth of petal, and an abundance of them in it; habits, vigorous and free, as seen at a recent meeting of the Royal Botanic Society; the flower was as near perfection as a rose could well be."

Hybrid Perpetual, Mons. Claude Levet, is also remarkably fine; color, shaded rose, flushed with violet, large and full, and with a good free habit.

Hybrid Perpetual, Madame Jarvain, is another splendid flower; and its beautiful, pale, blush-pink tint will be certain to render it acceptable to everybody. If the testimony of our leading rosarians be of any value, this will prove to be one of the best of the new roses just being put in commerce.

A thorough good rose is *Hybrid Perpetual Etienne Levet*; and this so completely established its character as a good autumnal flower, that its general good qualities may be taken for granted. This is of a shaded brilliant rosy hue, flushed with violet; the habit appears to be all that could be desired.

Tea, Madame Cecille Berthod, is a beautiful, bright pale yellow flower, of

remarkably fine build and substance, and a free grower ; it is a variety showing the possession of a great deal of refinement.

Tea, Madame Camille, has full and finely cupped smooth flowers, with a great deal of petal ; the color flush on the exterior, with bright salmon, buff center.

Tea, Madame Jules Margottin is a charming Tea Rose ; the circumference of the flower, flesh white, the center primrose and nankeen in the bud state, it is simply perfection ; the habit is vigorous and free, and it has a most desirable upright growth.

Plans for Laying out Gardens.

There is not enough attention paid to this subject in our horticultural literature ; and yet, the people are delighted with any plan or suggestion, showing how to arrange their floral borders and ornamental plants ; and yet, every place must have its own plan. No distant gardener could give an absolute rule, good for any place, in any town. Hence, plans must be made specially for each place ; and then comes judicious advice about planting. Some of these suggestions are urged by the *Agriculturist*, as follows :

Whatever else there is, let there be a plenty of turf. The humblest place can afford an expanse of grass, which if large is dignified by the name of lawn, and if small is called only a grass-plot. This gives an air of neatness if there should be no flowers, and if there are flowers, no matter whether costly or common, their appearance is many-fold enhanced by the turf-setting. Do not strive after anything elaborate and complicated. Recollect that the more elaborate the pattern, the greater will be the care required in keeping. Scroll, chain, and other borders look wonderfully well in print, especially if they are printed in colors. But these plans which are carried out in the favorable climate of England only by keeping a number of men at them all the time, would utterly fail with us, where one gardener is expected to do everything, and where in the majority of cases there is no gardener at all. Lay out only what can be well cared for from spring until frost. Circles, ovals, ellipses, and egg and "palm-leaf" shapes, neatly cut in the turf, are much better than anything more complicated. Avoid making beds with sharp points and acute angles. If one has only room for a single bed, as in a front-yard in town, he will get more satisfaction out of plants with striking foliage than with flowers. A circle, edged with some of the silvery-foliaged plants, such as Centaureas, Cinerarias, and Artemisias, then a row of Achyranthes Lindeni, and within this a center of some of the Golden Coleuses would be bright and showy all summer. This is only a suggestion, as the bed may be planted in a great variety of ways. A group of Cannas would give both fine foliage and flowers, and this may be edged with a row of Gladiolus with some low-growing plant upon the extreme margin. Very good effects may be produced with little expense by the use of annuals, among the most popular and best of which is Phlox Drummondii in its various kinds, from white to deep scarlet.

In laying out beds of any kind, recollect that every foot of path and every foot of margin implies a promise to keep the one clean and the other neatly trimmed. Unless there exist the ability and the inclination to do these, the beds had better not be laid out but the grass left unbroken.

Weeping Trees.

Among horticultural topics and facts about ornamental planting, no single subject is studied with such interest now-a-days, as that of *Weeping Trees*. Nurserymen are on the *qui vive*, to find something new, which will prove a great acquisition. All the really good varieties are kept in their Catalogues, and this department of rural taste is better cultivated than formerly. This topic is an old one among English gardeners; and yet, it is still discussed, never dropt out of sight. In a recent number of *The Gardener's Chronicle*, a correspondent takes up the principal varieties and gives some judicious hints as to which are the most desirable:

"Every one is familiar with the Weeping Willow, and appreciates the charming contrast its lithe, pendulous branches make, with those of the pyramidal shaped trees, as well as the effect produced by its light colored foliage, when associated with leaves of a darker hue; a purple beech, for instance. But many people seem to think there is nothing beyond a Weeping Willow, and a Weeping Ash; and many a gardener thinks the catalogue complete for all practical purposes if he makes up the trio with the pendulous *Scampston Elm*, a truly noble elm; which is deserving a place as a lawn tree, or wherever an isolated drooping tree, of bold, elegant form, is required.

The common Weeping Willow, *S. elegans* (better known by its old name *Babylonica*), however, is not the only Weeping Willow worth growing. The new *S. Salomonii*, though less pendulous, is equally fine, and is a rapid grower. Of smaller kinds, that make fine ornamented plants when worked or grafted as standards, are the *Kilmarnock Willow*, *S. Capraea pendula*, with broadish leaves, whitish beneath. *S. rosmarinifolia*, with long linear leaves; *S. purpurea pendula*, with similar, but shorter leaves; and *S. Wolseyana*, lately referred to in our columns.

Weeping Poplars are also particularly elegant. The pendulous variety of Aspen worked as a standard, is a plant no one should be without.

Youngs Weeping Birch (*Betula*), is a tree which no planter, having once seen, would willingly dispense with, any more than he would with similar forms of Beech. Two or three varieties of Oak, with pendulous branches, are cultivated; such as *Q. Robua pendula*, *Q. Americana pendula*, *Q. rubra pendula*. All probably seedling varieties; but not to be placed, in our opinion, in the front rank, so far as beauty is concerned.

The *Weeping Filbert*, *Corylus avellana pendula*, is one of the boldest of pendulous shrubs; making, when in vigorous growth, very long flexible shoots, and large bold leaves. This, too, is a bush that will grow almost anywhere.

Pyrus Salicifolia pendula is a valuable tree, from combining the pendulous habit with lanceolate leaves of a silvery-white hue. This is a tree which is perfectly hardy, and will thrive even in towns. Though excelled in beauty by some, it is hardly to be surpassed for general usefulness.

Cerasus depressa pendula, grafted as a standard, might well be mistaken for a Willow, in the absence of flowers. These latter are produced before the leaves appear in spring. *Cerasus mystifolia variegata pendula* has a similar habit.

The *Weeping Bigarreau cherry* is also an interesting tree, as is its neighbor, the Weeping Mountain Ash.

Sophora Japonica pendula, again, is a very handsome form, with foliage resembling that of the *Robinia* (*acacia*), but darker in color.

Gleditschia sinensis pendula, when grafted on *G. trianthus*, as a stock, produces a roundish head of bright deep green foliage, interesting from the diversity of form exhibited in individual leaves, some being much compounded, others nearly simple.

The *Weeping Walnut Juglans regia* is, as to shape of foliage, but not as to size, like those just mentioned. Its habit is noble, its growth rapid. Have seen shoots of eight to ten feet in a single season.

New Shrubs.

The Dwarf Almond, *Amaygdalus nana*, is a deciduous shrub of low growth, which, in the opinion of the florist and pomologist, should oftener find its way into ornamental shrubberies. It is, however, one of the old fashioned things which seem to be overlooked now-a-days. M. Carrière, has recently described (*Rev. Hort.* 1872, 340) two new varieties, which he calls *A. n. microflora* and *A. n. Campanuloides*.

Amaygdalus nana microflora is a branched bush with sub-erect ramifications, having the leaves like those of the type, oblong lanceolate, and the flowers small, spreading, with narrow petals, often more numerous than usual, thus showing a tendency to duplication of a lovely rose, each marked at the top, exteriorly, with a deeper spot.

Amaygdalus nana Campanuloides, so named from its numerous flowers, being much more expanded than those of the type, so as to acquire a kind of bell shaped form, presents little difference of habit, but it forms, nevertheless, one of the prettiest of shrubs at the time of flowering, since it seems to disappear, under the quantity of its pale fleshy rose colored flowers. In this case the leaves are long, narrowly lanceolate, with rather fine toothing. The multiplication of these two plants is effected by means of suckers, which are produced abundantly; these should be separated and planted in the autumn, for if this work is deferred till spring, the plants scarcely push forth at all the first year.

Philadelphus primulaeflorus is recommended by the *Revue Horticole*, a very pretty hardy shrub. It is an issue from the common *Syringa P. Coronarius*. The names given to it recall exactly the form of its flowers, which, in their aspect, are analogous to those of the double flowered varieties of primrose, with which, in the spring, one makes such pretty edgings. The character of *P. primulaeflorus* may be thus summed up: It is a bushy, branched shrub, with short ramifications; its leaves are glabrous, regularly oval cordiform, of a deep green, dentate, with sharp spinescent teeth, having a bullate surface, and reticulate prominent veins; its flowers are odoriferous, semi-double, of a fine white, with regularly rounded petals.

In the opinion of the florist, it is a very pretty plant, especially remarkable for the regularity of its flowers which, never thoroughly opening, rather recall those of certain species of the *Ranunculus*, when they begin to expand. It is unnecessary to add that it is hardy, and that its culture and multiplication are identical with those of the common *Philadelphus coronarius*.

Shrubs for the Lawn and Dooryard, Care Necessary.

The art (for it is an art) of pruning and keeping shrubs in neat shape is yet to be learned by most of the ruralists of the country. We have known of cases of people so stupidly ignorant that they pruned spiraea, deutzia, dwarf almond, before the spring growth commences, and then wondered why they never got a blossom. They had not yet learned, or at least observed, that the blossoms are borne almost entirely upon the last year's wood before the coming of the leaves. The best way of growing shrubs now-a-days is in groups or well planted masses, thus giving a mutual protection, and effective display. But, as *The Country Gentleman* observes:

When they are grown as isolated plants in front door-yards, it is necessary to make them hold their heads up, and look trim and tidy. Every day we see examples of such bushes tied up in compact bunches, with a stake to secure greater uprightness; but towards April it is common to see stake and all dangling helplessly over. Then they are straightened by re-setting the stake, and by cropping the disheveled tops by barber-ous pruning shears or knife.

This treatment is senseless. It directly defeats the main object, which we suppose to be the securing of a plant of neat figure, robed in luxuriant leaves, and brightened with well-expanded flowers. For it is obvious that not one of these crowded shoots can open its leaves to the light, and as they were similarly suffocated last summer, they have nothing laid up—no means or substance from which to produce good flowers this year, even if there were room to display them. Next summer they will, of course, be barren too, if the leaves are given no room to turn.

But the bush will do something, so long as it has roots safe and sound, and as it can do nothing else well, it will go back to the primitive course of throwing up fresh sprouts from the ground, thus adding to and aggravating the crowded condition above.

The right treatment in such a case is to use a strong, narrow knife, or saw, or sharp pointed pruning shears, such as French gardeners use, or a suitable chisel and mallet, and cut out all the old exhausted shoots, and all the young ones that are weak or unripe, close at the surface wherever possible, or beneath it, for neatness sake, leaving only those which have been first selected as the best and the best placed. Separate these by tying or spreading, using a light hoop, if necessary, to secure a well-balanced and evenly distributed figure, with full room around each shoot for its flowering branchlets and leaves, and full access of light and free air throughout. If a stake seems needful, it will not look amiss, provided it is set erect and centrally, even although it may be thick and tall. In that position it may be even taller than the shoots. The shoots left to bloom should not be shortened further than to make ill-turned, unsymmetrical branchlets, or slender ones incapable of bloom.

If this care is supplemented by a trifling attention, in May or June, to pinch out the sprouts that will appear numerously then, leaving only the suitably placed few that are wanted to fill vacancies, or to renew good blooming canes, according to the nature of the plant, the fullest rewards of successful training will be attained. Some plants make a rank growth from the tops in August or September, and in their case a pinching of the ends of wild or wanton shoots is advisable.

Climbing roses, raspberries, currants, gooseberries, etc., class under the above rule of treatment.

When shrubs are grouped in masses they are not tied up in any formal figure. Pendant branchlets or low growing sorts placed in front of erect ones hide the stems, and present to the sight only leaves and flowers, as in natural bosage.

Roses, American Culture.

The rose never wearies us, we enjoy every mention of it, and though not a new beauty, yet its beauty never wears out. Read what *The American Rural Home* says about planting *Rose-beds*:

The rose likes a virgin soil, and the nearer the composition of our rose-beds approximates to that, the greater will our success be likely to be. Hence decayed sods, and leaf-mould from the woods when it has been sweetened by the sun, are good fertilizers.

The old-fashioned way of scattering roses about the lawn is not the best way. Their culture, thus isolated, is apt to be neglected, and grass works in and chokes them; besides the effect is not equal to where they are grouped in a round, or oblong bed, highest in the center.

Suppose that we decide to plant a bed of Hybrid Perpetuals. In the center we would want a white rose, or a cluster of white roses, according to the size of the bed. Madame Alfred de Rougemont is one of the finest whites. Portland Blanche is another fine one. Next we could have a row of flesh color and light pink. Caroline de Sansal is one of the finest of the former, and Sydonie of the latter. Auguste Mie—rosy pink, would pretty nearly correspond with this shade. The next row should be still deeper, rose or deep rose. Of this shade, we have Barronne Prevost, Victor Verdier, and Madam Victor Verdier. In the next row we could have rosy crimson, rosy lilac, rosy carmine and vermillion. Among those of these shades, Anne de Diesbach, General Washington, John Hopper, L. Reine, Mad. Fremion, Maurice Bernardin and William Griffith, rank the highest. On the outside we could have the deepest shades, as deep red, crimson, and velvety. Dr. Arnal, Francoise Arago, Giant of Battles, General Jaequeminot, Jules Margottin, Pius the Ninth, Prince Camille de Rohan, and Triomphe de l'Exposition would fill the outer ring.

We do not say that this order should be strictly adhered to, but we think the highest effect would be produced by having white in the center, and gradually shading deeper to the circumference. All that we have named are first-class roses, and our readers may be assured that in selecting from them they will get no inferior rose.

Supports for Flowers.

A correspondent of *The Journal of Horticulture*, remarking that there are many gardens in or near cities, the cultivators of which have not the easy facilities of getting an abundance of serviceable sticks, to which to tie their pet plants, proposes a plant, the growing of which will solve the difficulty. It is of easy culture, and within the reach of most gardeners, and a great quantity can be grown in small space. The plant is a common one in most gardens, but not grown so much as it deserves. It is the Halesia, or Snow-drop tree which entwines our shrubberies with its beautiful snow-white drops in winter.

Procure plants or suckers; select a piece of ground; they are not particular as to

soil, any out-of-the-way place will do, but a moist one will suit them best; plant them one foot apart, and cut them down to within two inches of the ground every autumn. If a few stronger sticks are wanted, leave the plants a winter without cutting, tie the shoots in bundles, and keep them in a dry place until wanted for use. If used green, as they emit roots so freely, they should be placed in a hot flue oven, or some such place, for a few hours.

The quantity a few plants will grow is astonishing, and the sticks will last two years, and I am sure they are unequalled for tying such plants as Achimenes, Mignonette, etc. If allowed to grow in the shrubberies, the plants are very ornamental; but when permitted to flower, and make large bushes, the quantity of shoots obtained is diminished considerably. Bees, too, are very fond of this plant, the flowers being numerous; and from them, the bees gather a great quantity of honey.

There are other plants, from which useful flower sticks may be taken; many varieties of hardy, deciduous, Spiræas; varieties of Hypericum, or St. John Wort, Ligustrum, or Privet and Lilaes.

The Weeping Larch.

This is one of the most elegant of all our hardy deciduous trees, and I presume that it is rare, at least as a large tree, as I have never yet seen or heard of any approaching the size of one growing in these gardens, which densely covers a walk ten feet wide, for a distance of 130 feet, its side branches spreading full fifteen feet on each side, down to the ground. It is of so recumbent a form of growth, that a very powerful support to the branches is necessary, to allow of sufficient height for walking underneath.

Some few years since, a double row of polished Oak posts, eight feet high, was erected under it; on each side of the walk, with iron posts just under the stem and main branches, and crow-bearers at intervals, to support the lateral branches; which have covered the whole structure so effectually, that the sun's rays cannot penetrate it. The branches grow perfectly flat on the trellis, requiring no training, and there is not one on the whole tree rising to a greater height than fifteen feet.—*The Garden.*

Award of Premiums American Pomological Society.

OFFICIAL LIST.

Apples.

1st Premium—State collection, to the State of Nebraska; Silver Medal and \$50.
2d " —State collection, to the State of Kansas; Bronze Medal and \$25.
1st " —Individual " to J. W. Ross, Perrysburg, O.; S. M. and \$50.

Pears.

1st Premium—Society collection, Cambridge Horticultural Society, Mass.; Silver Medal and \$50.
2d " —Connecticut State Board of Agriculture; Bronze Medal and \$25.
1st " —Individual collection, to Ellwanger & Barry; Silver Medal and \$50.
2d " —Individual collection, to Hovey & Co.; Bronze Medal and \$25.

Special Awards—Wilder Silver Medal.

1. To The Fruit Growers' Association, of Ontario, Canada.
2. To Messrs. Smith & Powell, of Syracuse, N. Y.
3. To E. Moody & Sons, of Lockport, N. Y.
4. To Joshua Cooledge, of Watertown, Mass.
5. To F. & L. Clapp, of Dorchester, Mass.

Wilder Bronze Medal.

1. To Central Delaware Fruit Growers' Association, Milford, Del.
2. To G. F. B. Leighton, Norfolk, Va.
3. To John Saul, Washington, D. C.
4. To W. D. Breckenridge, Govanstown, Md.
5. To Chas. W. Reed, Sacramento, Cal.
6. To J. H. Dickerman, New Haven, Conn.
7. To Alexander Dickinson, Cambridge, Mass.
8. To Farmers' Club, Sacramento, Cal.
9. To Nebraska State Agricultural and Horticultural Society.
10. To Rev. M. Burnet, Province of Ontario.
11. To Parker Earle, Cobden, Ill.
12. To Lewis Slack.
13. To R. Cushman, Pawtucket, R. I.
14. To E. Daniels, Accotink, Va.
15. To J. J. Toon, Atlanta, Ga.
16. W. B. Weeks, Norfolk, Va.

Grapes.

1st	Premium—Society collection, Ontario Fruit Growers' Association ; Silver Medal and \$50.
2d	" —Society collection, South Haven, Michigan Pomological Society ; Bronze Medal and \$25.
1st	" —Individual collection, J. H. Ricketts, Newburgh, N. Y. ; Silver Medal and \$50.
2d	" —Individual collection, Hoag & Clark, Lockport, N. Y. ; Bronze Medal and \$25.

For the largest and best collection of named grapes, grown west of Rocky Mountains: Premium to James Rutter, Florin, Cal. ; Silver Medal and \$50.

For the largest and best collection of grapes grown under glass: Premium to Geo. B. Durfee, Fall River, Mass. ; Silver Medal and \$50.

Figs and Oranges.

Best collection of Oranges, to D. Redmond, Pass Christian, Miss. ; Silver Medal.

Peaches.

1st	Premium—Society collection, Central Delaware Fruit Growers' Association ; Silver Medal and \$50.
2d	" —Society collection, Fruit Growers' Association, Ontario, Canada ; Bronze Medal and \$25.
1st	" —Individual collection, David S. Myers, Bridgeville, Del. ; Silver Medal and \$50.

Plums.

Bronze Medal to Deseret Agricultural and Manufacturing Society, Utah.

" " " C. H. Greenman, Milton, Wis.

" " " G. P. Peffer, Pewaukee, Wis.

Objects of Merit.

Silver Medal to collection of Fruit from State of Vermont, forwarded by I. Bryant.

" " " F. & L. Clapp, Dorchester, Mass., large collection of Seedling Pears.

" " " J. H. Ricketts, Newburgh, N. Y., fine collection of Seedling Grapes.

Bronze " " Deseret Agricultural and Manfuaeturing Company, Utah ; collection of fruit from Salt Lake Valley.

Silver " " Polk County Agriculatural and Horticultural Society, Iowa.

" " " South Haven Pomological Society, Mich. ; fine collection of fruit.

" " " Fruit Growers' Association, Ontario ; extensive and excellent collection of fruit.

" " " G. B. Durfee, Fall River, Mass. ; Superior collection foreign grapes.

" " " F. & L. Clapp, Dorchester, Mass. ; for remarkably fine display
Clapp Favorite Pears.

Bartlett Pears.

BY C. W. IDELL.

ARE the best known variety among growers and consumers ; yet some growers of pears seem to be ignorant how to market them to get the largest prices. I will give them a few hints. Remember that *size, beauty and perfection in shape* are strictly necessary to make a prime article. If large and imperfect, they can be counted at the best as a second class article, and a clearness of skin is also necessary to add to their beauty ; don't pick too green ; if you do, the fruit will not ripen with a delicate flavor or bright skin ; they will wilt and taste insipid. A medium size pear with the above attributes will sell better than large ones without them. Every grower should thoroughly understand the ripening process, for they can retard or assist this process by ventilating the packages more or less, according to ripeness of the fruit and heat of the weather.

In sorting qualities I would recommend, that where the primes predominate, pack them separate, rejeeting all knotty or inferior fruit, making two qualities, prime and good. When the fair predominates take out all culls, then make but one quality of the remainder, for if the few primes in the lot are taken out, it injures the general lot more than you gain on the sale of the extras. If culls are very poor send them to the hog-pen, where they will meet with a demand and no expenses added to them. Be very careful not to break the stems, either in picking or handling, for the loss of the stem is detrimental to their sale. Pack evenly through the entire package, then mark the variety and quality plainly, and don't forget to mark the initials of your name on them. Qualities may be marked with crosses XX for extra, and X for culls or fair and culls not marked. A great many growers forget to mark their names on the packages, consequently the dealer is unable to distinguish one from another's. Half barrels are preferred to barrels, although the latter will answer if the fruit is hard.

The Flower Trade of New York.

Its Progress—The Producers—Bulbous Plants and their Culture—Summer Flowers, etc.

DURING the past ten or fifteen years the flower trade of the city of New York has grown up to something marvellous in quantity, and but very few are aware of its present extent and importance. The *Evening Post*, in devoting considerable space editorially, recently, to a notice of the trade, says: "Fifteen years ago there was hardly a flower store on Broadway, and the dandy of the period, when in quest of his button-hole bouquet, had to depend upon the wandering flower-girl, or make a visit to the distant greenhouses to supply his wants. To-day all of this is changed; fifty stores, at least, devoted to the sale of rare and fragrant flowers, are to be found on Broadway alone, and their trade in this evanescent stock is said to amount to more than one million of dollars annually."

To-day flowers in vast profusion decorate the drawing-rooms of the wealthy, and, in less quantity perhaps, the homes of the poor. The bridal festival calls for its wealth of floral offerings, and the coffin and the tomb vie with it in the richness and prodigality of their gorgeous adornments. At Christmas, New Years and Easter the church altars are loaded with floral tributes also, and the lavish supply shown on such as well as all other occasions excites the curiosities as to the source whence they come. We have some large greenhouses, so-called, in the neighborhood of New York, and some statistics and information in regard to their working will be found interesting as well as instructive.

The Producers.

"The production of flowers by our nurserymen is simply a matter of business, and but little art is required in the pursuit. The art of flower-raising, of which we often hear, is more the result of the gardener's genius than inherent to his calling. It is the design of the parterre, or flower garden, in the massing and arranging of plants according to their relations of color, which exemplifies art, rather than the production. In the raising of flowers, beauty of form, size and variety of color are sought after, and it is the gardener's aim to secure these features in his plants.

Probably the greatest variety of plants has been raised from seed; and this property of reproducing almost countless varieties of flowers from the seeds of one plant is possessed by almost every flowering shrub. That is to say, the flowers may be of the same variety, but they will be differently marked. This is particularly the case with the gladiolus. Twenty years ago there were only six or seven varieties of the gladiolus known. Now there are over one thousand distinct varieties, and all have been raised from six or seven original flowers, and the number is increased every season. The pure white gladiolus originally came from the Cape of Good Hope; but it was a small flower, and at its introduction, ten years ago, was not much thought of; by careful cultivation, however, it has become one of the choicest flowers of the field and garden.

C. L. Allen's Gardens.

One of the rarest sights of the summer season, in a floral way, is C. L. Allen's gladiolus preserves. This nursery is on the line of the Central Railroad of Long Island, about fourteen miles from Hunter's Point, and the route of the road is through the center of a fifteen acre field devoted to the culture of this beautiful flowering bulb.

The Gladiolus.

One hundred thousand gladiolus bulbs are planted to the acre, and but little knowledge of arithmetic is required to figure out the number of plants growing in this fifteen acre plantation. It may well be imagined that the sight of this field of flowers is grand. In passing through it by rail the sensation is that of entering a fiery lake, for the red and crimson flowers predominate, and the illusion is enhanced as the breeze sways the spikes of flowers to and fro in the form of mimic waves. These brilliant flowers are sent to the New York market daily, ten thousand, perhaps, at a time, and are to be seen on every street stand as well as in the more pretentious flower stores.

Flowers and Bulbs.

Gladiolus bulbs of the best mixed varieties are worth twenty-five dollars a thousand. Of the flowers, Mr. Allen is at present sending one hundred dollars' worth per week to our city stores. As soon as the flowering season is over with the gladiolus, the bulbs are taken up and dried, and the largest are laid away for autumn and spring sales, while the smaller sorts are replanted for the next season's flowers.

Ten Acres of Tuberoses.

Mr. Allen's plantation of flowering bulbs also comprises ten acres of tuberoses, which embrace over five hundred thousand plants. This section is just coming into flower; but, as it will only show a mass of pure white, it will lack the beauty of the gladiolus display. Of the lily tribe there are thousands of varieties of the double Tiger, Japan and other sorts. Indeed, the Japan lily forms one of the leading sorts in Mr. Allen's collection, as five acres are devoted to its cultivation. There are one hundred distinct varieties of lilies in these grounds.

Where the Bulbs are Sold.

It may be asked here, where do these bulbs go? for the production is immense. Mr. Allen says he ships them all over the world, and in confirmation, in part, of this fact he has just filled an order from London amounting to \$1,000 gold. Immense quantities of the bulbs are also sold at retail throughout the country. The gladiolus is easily cultivated and requires but little space. Indeed, they will stand crowding, and the more bulbs there are in a plot the better they appear when in flower.

To supply the demand for bulbs, which is constantly increasing, there is one plantation connected with this nursery containing fifty-two acres of gladiolus, tuberoses, lilies and other bulbous plants, which are grown for their bulbs alone.

The Lily Family.

Of the lily family, its grandeur for the present season is gone, and the bulbs are now being dug up, dried, and assorted for market. The smaller bulbs will be replanted in a few weeks for the next season's growth. Bulbs of the lily family, as well as those of the gladiolus, will soon be potted for winter flowering. For winter flowering the favorite sorts are the white varieties, and also the fragrant and delicately marked Lily of the valley. This last named flower is now forced and brought to great perfection as a winter plant.

The Canna.

Among the ornamental shrubs which are greatly sought after for the decoration of lawns is the "Canna." It is a free growing plant, and its large and brilliantly marked leaves present a beautiful appearance, especially when grown in masses. At the Allen nurseries the gardens are divided by rows of this superb plant.

Dahlias.

The dahlia is a somewhat bushy and free growing plant, and will not bear crowding to such an extent as the gladiolus. There are two acres of this plant now under cultivation. The plot contains fifteen hundred plants, and when in bloom, forms a beautiful sight. This dahlia plantation contains a great variety of flowers, some of which are very rare.

The Peony.

One acre is devoted exclusively to the cultivation of this showy plant. The paeony, although old-fashioned, is yet a favorite garden and lawn flower, and it is considered a staple nursery plant.

Roses.

It is the popular belief that there are several hundred varieties of the rose family, and this is in a measure true; but of this large number there are not over ten or twelve sorts prized in the greenhouses. In private gardens it is the ambition of some owners to cultivate all the varieties, and to produce as many new sorts as possible; but for market and decoration purposes the number given above embraces all that are really valuable. Of the white or straw colored roses there are only two kinds which are really valuable—they are the “Safrano” and “Marsehal Niel,” we believe. The first named is the favorite. Five thousand plants comprise the stock of roses in this nursery, but the number for winter flowering will be propagated almost indefinitely.

Miscellaneous Plants.

Among other herbaceous plants in flower at present there are twelve thousand carnations; thousands of the tigridia, a gorgeous member of the lily family; a half acre of white double balsams; and geraniums, verbenas, callas, violets, pansies and other varieties too numerous to mention.

Summer Flowers.

During the season of outdoor flowering the demand from the city is unceasing, and the small dealers, as well as the large, visit or send to the out-of-town gardens daily for their supplies. Just now, probably, the largest trade in cheap flowers is done at the ferries, at the hotels, and even in the streets. At the Astor House steps the flower stand at early evening is thronged with customers, and although the stock of cut flowers appears to be small, it yet holds out until a late hour. At the ferries the sales are very large, and there are few people crossing who are too poor to purchase a bouquet for the adornment of their homes.”

[TO BE CONTINUED.]



Preserving Grasses, Ferns and Flowers.

EVEN THE HORTICULTURIST has its artistic fancies, and it is a pleasure to turn away from the consideration of such practical things as the garden, vineyard, and orchard, and bestow a little time and taste upon the window ornamentation. Our native ferns, grasses, nuts, etc., always afford scope for an infinite variety of arrangements in preparation for artistic home ornaments. The *English Farmer*, in speaking of grasses, says: “They should be gathered in July if we desire them to retain their bright hues without the aid of art. Gathered, then tied up in large bunches, and hung away in a dark closet, they come forth at our bidding fresh and green as when picked.”

"By brook sides and shady places, we can find graceful grasses which will prove additions to our winter bouquets, but they will lose their coloring if gathered late, and require a dip into "Judson's green dye." Dye them again and they will last for years.

Wild oats, feather grass, and all their various species, are very ornamental in winter, and mingled with the everlasting flowers—*Aeroclinium*, *Xeranthemum*, and the white, yellow, and crimson *Helichrysum*, they vie with their more perishable sisters, whose glories are on the wane.

We have just arranged two small vases for the coming winter. The brilliant pink and white *Aerocliniun*, add much to their beauty.

The white *Helichrysum* can be dyed a brilliant purple or scarlet, with Judson's dyes, and exquisite bouquets can easily be manufactured. These "everlasting flowers" should be gathered as soon as the outer leaves open; tie them up in bundles as you pick them, and hang them up, flowers downward, to dry. Treated in this way, the stems are straight and more easily used. They can be hung to dry in one's chamber, not requiring a darkened place. Most of these flowers are allowed to remain too long upon the bushes, and their beauty is spoiled; as they become dusty, under the frequent sweepings of carpets, we dip them in cold water; their petals close entirely. We dip the grasses also to cleanse them, else they will acquire a dingy hue.

Chrystallized Grasses.

"Many persons like Chrystallized Grasses. They are easily made by dissolving one pound of alum in one quart of boiling water, suspending the grasses just over the steam—not to touch the water, and as it cools the chrystals gather. Grasses need not be dried before they are chrystallized. A few of them mingled with the green grasses and brilliant hued flowers, light up the wall.

Ferns.

"Ferns are much sought after for floral decoration. Their feathery plumes, pinnated leaves, and graceful forms are very beautiful. They differ from the grasses, for those gathered late in the Autumn retain their color better than the first ferns of June. The sap has hardened in their leaves. We have gathered them late in November, when they were surrounded by snow, and they have kept green all the winter. The running fern is a lovely decoration for walls and pictures; its flowers add much to its grace and beauty, but it fades quickly, and by Christmas but a faint green remains. Dip them in Judson's dye (following the directions given on the bottle for dyeing ribbons), and you will keep their lovely colors. After they have been thoroughly pressed in heavy books, then dye them, spread on paper and dry in the shade, and then press them again. Thus treated, they will last for years. Maiden-hair, the most graceful of our ferns, soon loses its color, but dyed, it is an addition to every collection of grasses or ferns.

Parsley Fern is very beautiful; its soft, feathery leaves are always sought after. These, if gathered late in the Autumn, will retain their color much better.

The Male Fern, with its stiff stems, if well prssed, looks beautiful. We mingle it with the many colored leaves of Autumn, or we pin it to the wall paper, around pictures, or over lace or muslin curtains, and its effects are charming.

The branch of Sumac, gathered soon after the frost has appeared, or even before, press perfectly and keep their color finely. If varnished with map varnish they never fade. Branches of this tree interspersed with the ferns are very ornamental. We have made exceedingly pretty crosses from its leaves, sewing each one separately over the other on a pasteboard cross. Anchors and stars can also be made of its lance-shaped leaves. Thus suspended over engravings, or curtains, they are very ornamental, and are easily dusted, and essential in the eyes of a good housewife.

Mosses.

Bunches of dyed moss are to be purchased of all seedsmen, in the cities; we dwellers in cities cannot avail ourselves of them if we would; but we can make them even prettier than those exposed for sale. Gather the moss, pick out all the *debris*, cleanse from dirt, and dry in the sun; then dip into Judson's dye; spread on paper to dry by fire or sunlight. We gathered last year a very finely fibred moss, dyed it a lovely green, and saved some of the original colors to mingle its brown hues with it. Then we took the "hoops" from an old skirt, tied them together, and on the circlet tied wreaths, which city friends said "surpassed those displayed in the shops."

New Raspberry.

EDITOR of THE HORTICULTURIST:—Dear Sir—By the suggestion of D. H. Brown, Esq., of New Brunswick, I send you two berries, a section of the wood, and a leaf of a new raspberry, found on my premises at my country seat, near Adams, N. Y., last season, during bearing time. The bush formed last year appeared rank and majestic, two of the new stalks of last year, bearing this, being over eight feet long; and though the bush was transplanted last fall to a secure place, it is full of fruit this year, fair specimens of which I send you, though the color of the berries is changed from a crimson to that you see by the alcohol. The bush, in general appearance, is like the Black cap, though it grows more rank and majestic, its thorns being few, and not hooked and sharp, like those of the Black cap. The color of the wood, as you will see, is of a reddish cast, between that of the red and black varieties of raspberries. The leaf resembles, though is not identical with that of the Black cap.

The berry in *color, taste and consistence*, is between the red Antwerp and the Black cap, though the average size was last year and is this, more than three times, by weight, that of our Black caps; and the taste is delicious. The *peduncles* are longer than those of the Black cap, having a cluster of berries at the end, and then back towards the stalk are others in progress of growth, while the end cluster is ripe, thus prolonging its fruiting time.

All who have expressed an opinion to me, including D. H. Brown, Esq., of New Brunswick, N. J., and Messrs. Frost and Company of Rochester, N. Y., believe it to be a cross between the red Antwerp and Black cap, and think it may be valuable, being a new, hardy and very large variety of bush and fruit. I have named it the *Hybrid Mammoth Crimson*, as the most descriptive of its peculiar characteristics. The bush was found away from all others, and at a place it would not have been expected, having come up and grown in tough green sward, by a fence. From the one formed last year, by layering and dividing, I have now six of the bushes, large

and small. The very great difference between this and all other varieties of raspberries, with which all small fruit growers that have examined it and reported to me are acquainted, induces me, in the midst of pressing professional and other cares, to bring it to your notice.

Adams, N. Y.

E. R. MAXSON, A.M., M.D., LL.D.

Orchid House at Hillfield, near Reigate, England.

THE illustration which graces our frontispiece this month, represents an interior view of one of the most famous Orchid Houses in England. It is situated at Hillfield, near Reigate, and is part of the establishment of Mr. William Saunders. As stated by a correspondent of the *Gardener's Chronicle*, who visited it, the entire place is certainly one of the most interesting gardens that one can set foot in.

In this garden, which, among other curiosities, compels Fuchsia to do duty as bedding plants, there are at least 20,000 species of plants grown in the garden, in some form or another. Every nook and corner, every house, every pit, every rockery, every border, teems with interesting plants of some sort or other.

Of Orchids, the number grown here is legion, and several houses are assigned to them.

"Mr. Saunders does not confine his attention to the large flowered showy sections, but includes in his collections a veritable host of the smaller flowering kinds, whose blossoms yield in nothing but size to their larger compeers. Their beauty is, when looked for, quite as striking, often more so; while their conformation is very generally more interesting and extraordinary. Orchid growers, enamoured of the more garish flowers, have sportively denominated the house in which these little gems are grown as *The Refugium*, a name which the owner has accepted, and made the title of an illustrated work descriptive of these and other treasures. And the Refugium is well filled; the refuge Orchids swarm everywhere; above, below, on each side; and to make room for more, an ingenious device is adopted, viz: that of erecting curved or bowed wire trellises, along the sides of the houses near the glass; on these bows the tiny Orchids cluster. Too thick, we hear some one say; not a bit of it. The Orchids are in the finest health and vigor; the plants are not large, but they are in perfect health; and the roots they make!"

If we were to describe literally a *Catasetum* of no great size, we saw hanging in a basket from the roof, we should scarcely be believed. Equally remarkable is the manner in which the roots in other cases cover the pots with a perfect net-work, creeping from pot to pot; more as "Creeping Jenny" would do, than like an ordinary Orchid. The secret of this unusually luxuriant root growth, Mr. Saunders believes, lies in the due aeration of the roots. He is a great advocate for the free access of air to the roots; and when the peculiar habit of orchids is considered, and the special structure of their roots borne in mind, there can be no doubt as to the soundness of Mr. Saunders' physiology."

In another direction is a *Cattleya House*, elsewhere a cool *Orchid House*, facing the North, constructed of boarding only, with provision for keeping the frost out and nothing beyond. The air here is still cool and moist, the light tempered, and the plants seem as healthy, firm and green as so many cabbage plants. Nothing could be better for the particular kinds of Orchids, and the particular uses for which it is intended.

One house is devoted to Cape Pelargoniums, of the old stamp, with their knotted stems, bright flowers and sweetly scented foliage. Among the species in bloom at the time of our visit, was a very remarkable one—*P. oblongatum*, with a thick fleeky root-stock, and a truss of sulphur-yellow flowers.



Entered according to act of Congress, in the year 1873, by HENRY T. WILLIAMS, in the office of the Librarian of Congress, Washington, D. C.

• Meeting of the American Pomological Society.

THE meeting of the American Pomological Society, held at Boston, September 10th to 12th, was a grand affair. The attendance of members was larger, and the display of fruits more extensive and attractive in most departments than upon any former occasion in the history of the Society. Fruits came from nearly all sections of the United States and the Provinces—extending from Nova Scotia to California. The exhibition must have been the most complete ever made in any country. The collection of apples, in extent of varieties, outnumbered the show at Richmond two years ago, but in point of perfection fell short; while pears, grapes, peaches and plums were superior. The fruit was displayed upon tables in the two spacious halls belonging to the Massachusetts Horticultural Society. Great interest was apparently felt by the citizens of Boston in the display, for the halls were filled to repletion during the evenings, with more or less visitors at other hours of the day.

The members were the guests of the Massachusetts Horticultural Society, and the committee of reception, consisting of Messrs. E. W. Buswell, B. G. Smith, H. W. Fuller, J. E. M. Gilley and S. H. Frothingham, were indefatigable in their efforts to make everything pleasant. For our part, we feel under special obligations to those gentlemen for their kind attentions at times when we were too unwell to take part in the meeting.

This being the twenty-fifth anniversary of the existence of the Society, President Wilder, in his able and instructive address before the Society, reviewed the circumstances which led to its organization, and thus spoke of its history and progress:

"Briefly, then, let me state that the idea of a pomological convention appears to have occurred to individuals in different states at about the same time—as new ideas in regard to progress frequently do. Thus in the summer of 1848, consultation was held with Andrew Jackson Downing, editor of the *Horticulturist*, then on a visit to Boston, in regard to the chaotic condition of our pomology—the want of accurate and well defined knowledge of our fruits; the best means of improving the condition of fruit culture, and the expediency of establishing an American society, so that, by interchange of experience, we might preserve those fruits which were valuable, discard those which were worthless, correct the confused nomenclature, and establish a pomology for our whole country. To establish such a society was a great work, but it was considered as the only means to accomplish the desired object. A cor-

respondence was immediately opened with some of our prominent agricultural and horticultural societies, and with the leading nurserymen and pomologists of our land. This resulted in the proposal of the American Institute of New York to have a convention held under its auspices in that city. Pursuant to these arrangements, a circular was issued, signed by committees of the Massachusetts, Pennsylvania, New Jersey and New Haven horticultural societies and the American Institute of New York, proposing to hold a "great national convention of fruit growers" in the city of New York, October 10, 1848.

"Of the fifteen persons whose names were appended to this call, three only remain. All the rest have joined the great procession of the dead.

"The convention met and the society was organized as the American Congress of Fruit Growers, by the choice of Marshall P. Wilder as president, a vice-president from each of the several states represented, and three secretaries—of these, S. B. Parsons and P. Barry are here to-day.

"The first National Pomological assemblage, solely for the consideration of pomological subjects, met at Buffalo, September 1, 1848, at the call of the New York State Agricultural Society, and after an interesting session resolved to perpetuate itself under the name of the North American Pomological Convention. But it was plain that there could be but one national organization that could carry due weight, and a conference was therefore had, which resulted the next year in the consolidation of the two associations under the name of the American Pomological Congress. The first meeting of the united association was held at Cincinnati in 1850.

"Its sessions, since the first three, have been held biennially. There have been three in New York, one in Cincinnati, three in Philadelphia, three, including the present one, in Boston, two in Rochester, one in St. Louis and one in Richmond.

"At the first session in Philadelphia in 1852, a constitution and by-laws were adopted and the name was changed to the American Pomological Society."

The largest collection of pears were from President Wilder, Ellwanger & Barry, and Hovey & Co. Large State collections were made by Kansas, Nebraska, Wisconsin and Vermont. Smaller, but no less meritorious, were on the tables from other states, county and other local societies, and individuals and the provinces. The display of plums and peaches from Ontario (these fruits were raised in the neighborhood of Hamilton) were very fine.

More work was done at this session of the society, than at any one of its previous gatherings. Upon the apple, pear and grape, the discussion was animated. As usual with such talk, there was more or less conflicting testimony among the speakers.

A very attractive feature in connection with this meeting, was the magnificent display by the Massachusetts State Horticultural Society at Music Hall, of tropical plants and flowers. This was said to be the best display of its character ever seen in New England. Conspicuous were Australian palm trees and tree-ferns. But the most wonderful was an India-rubber tree.

It would almost seem to the observer, that in the production of this tree nature had outdone her best.

Pleasant affairs in the round of entertainments, were the morning and evening receptions and collations given to the members by Hon. Wm. Gray, at his suburban

residence, eight miles out, at an early hour on Thursday morning, and in the evening at H. H. Hunnewell's beautiful place, in accordance with invitations from these gentlemen. The noble hospitality and generous attentions were a theme of general remark. About 250 members participated in these ever cherished excursions. These visits were so arranged as not to detract from the time of the regular meetings of the society.

Officers Elected.

President.—Marshall P. Wilder of Massachusetts.

Vice-Presidents.—Maine, S. L. Goodale; New Hampshire, William B. Towne; Vermont, B. Bryant; Massachusetts, C. M. Hovey; Connecticut, D. S. Dewey; Rhode Island, Silas Moore; and one for each State and each Province in Canada.

Treasurer.—Thomas P. James, Massachusetts.

Secretary.—William C. Flagg, Illinois.

It was voted to hold the next biennial session at Chicago in 1875, and to hold an extra session at Philadelphia in 1876, in connection with the great national centennial.

An invitation was given by the Massachusetts Horticultural Society, to partake of a social banquet, at Music Hall, on Friday evening. Nothing was wanting in the arrangements to render the occasion all that could be desired. President Strong, of the above society, called the assemblage, and briefly welcomed the members of the American Pomological Society to the festivities of the hour, closing his remarks with the sentiment :

"Hon. Marshall Pinckney Wilder—Pomology and Horticulture alike claim him as one of their most devoted and self-sacrificing patrons and vie with each other in doing him honor."

President Wilder made a happy reply. Other sentiments were given and responded to. The President then addressed a few parting words:

Ladies and Gentlemen:—With a heart full of gratitude that I have lived to see this grand celebration and this great exhibition which has surpassed that of any other nation of the earth, and that we have been permitted this evening to receive your kind congratulations and wishes for our prosperity, and that we have been honored with so many distinguished gentlemen from the various portions of this great country, I now propose as an appropriate close that the music shall strike up "Home, Sweet Home."

During the performance of the band, the large assemblage separated, pleasantly impressed with the boundless hospitality and courtesies of their hosts.



SMALL FRUITS.—Early and late Richmond and English Morello fruited well the past season. I am more and more pleased with the late Richmond and the English Morello—especially the latter. Concord grape, a good crop, Doolittle, Mammoth Cluster and Golden Cap were full crops. Green Prolific Strawberry is as hardy as a burr-oak; it stood the winter without covering, and the only variety on my grounds which came through safe unprotected. It bears well and I like it.

Baxter, Iowa.

S. B. HIGGINS.

Scuppernong. Is There Any Profit in its Production?

THIS question is asked together with another, viz.: Will there likely be any market for the fresh juice at figures that would pay?

First. We have abundant proof to answer, unhesitatingly, yes, providing one goes to work right. Grape culture, which at one time promised to assume vast proportions in the Southern states, was suddenly checked by a revolution in the labor system (which should rather have given it an increased development if we better understood rural economy), and the liability of loss in fruit from blight. Discouragement seemed to become as universal as it was sudden. Nearly all the vineyards of what is commonly termed bunch grapes went to decay from forced neglect.

But what of the Scuppernong? Far from meeting the fate of the other varietes, it has stood the test of time, as well as the ordeal of neglect in culture. Vines planted twenty years ago, when Catawba, Warren, etc., were alone thought worthy of attention, are yet yielding their annual crops of fruit, when their less robust congeners have gone where their vines twineth. The official reports of the Department of Agriculture show that the average yield of Scuppernong vines in North Carolina, when in full bearing, is from 400 to 500 bushels per acre, yielding from 2,000 to 2,500 gallons of wine. So much for producing capacity, which, however, must not be expected from every vineyard or in every section; but even reducing this yield to 100 bushels per acre, or 400 gallons of juice, and the profits are still exceedingly large in comparison with the outlay in forming the vineyard.

Fresh grape juice is unsaleable, unless one had his vineyard in proximity to a large wine making establishment. If this fails, one must convert the juice into wine. Small vineyards will seldom give enough products to warrant making wine for market. There is some difficulty in establishing a reputation for a certain brand, which, to become popular, must sustain its standard of quality. This can only be retained by working upon a large scale. In the wine growing districts of Europe, very few of the grape growers make wine; they sell their grapes to the wine maker or take in return a certain quantity of wine after it is made and becomes fit for use. In this manner the product of a number of small vineyards is converted into one uniform quality of wine, which if made separately by each producer, would give as many different kinds, and no regular market price be secured. Whenever a good article of wine has been produced for a series of years, there has been no difficulty in obtaining a ready sale for it at good prices. But when the supply is irregular as well as its quality, there will be neither demand or profit for the wine maker. North Carolina Scuppernong is sold in New York at from \$1.50 to \$3.00 per gallon, according to quality and age. When one thousand gallons is produced, the net cost of manipulating the crop, allowing liberal interest for outlay, labor, etc., is from 30 to 40 cents per gallon.

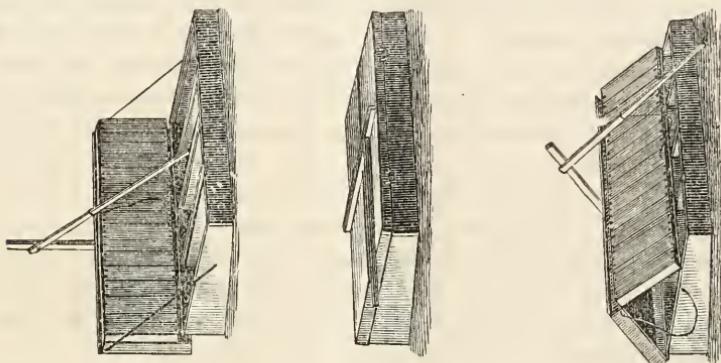
We are satisfied that there is more profit in growing the Scuppernong for wine than in the cultivation of any other fruit within the reach of our southern fruit growers, excepting, perhaps, strawberries and pears in a few unusually favorable localities. Unlike our other grapes, it is free from the depredations of insects, fungoid disease, liabilities of damage by late frost, and its fruitfulness increases rather than decreases with age.—*Farmer and Gardener.*

Plant-forcing Economics.

BY DR. JAMES WEED, MUSCATINE, IOWA.

SOON after we engaged in horticultural pursuits in Iowa, some thirty years ago, there occurred at this place a violent hailstorm—countless numbers of hailstones falling of an oblong form, about one and one-half by three-fourths inches in diameter. At this demonstration of nature “in the ice business,” we were much alarmed for the safety of our “air castles” when, in the future, they should become veritable glass houses.

We directed immediate attention to some means of protection in such emergencies, but finding it a difficult matter to accomplish satisfactorily, we wrote to A. J. Downing in relation to the use of shutters upon glass structures at the East. The import of his answer through the *HORTICULTURIST*, was, that, although they were formerly considered necessary and the advantages of their use were manifestly important, the



difficulties and inconveniences of their application were so great that they were generally abandoned. Subsequently practical experience of the severity of our climate has impressed us more and more with their importance as a means of economizing heat, as well as for protection against sudden and unexpected changes and external casualties; and by unremitting labor and experiment, we have at last obtained a shutter that completely answers our purpose for hot-beds, cold-frames and forcing-houses when constructed with reference to its use.

The accompanying illustrations represent this shutter in three positions; open, half open and closed. At the South it will be a very valuable safeguard against unseasonable “Northerns,” and at the far North, where the long nights during their long winters render a constant and protracted warfare against the encroachments of the ice king unavoidable, its utility is obvious.



ABOUT CIONS.—S. D. Redfield, Vinton, Iowa, writes us, Aug. 13: I cut cions from a plum tree late in the spring and grafted into a wild stock, and I never saw a more thrifty growth in any one season. Now, the very limbs from which the cions were cut and a portion of the whole top of the tree is dead.

Query—If the temperature was so low as to freeze solid the liquid in plant structure, so as to destroy the tree, where did the cions get their vitality?

Orchards in Grass—Protection.

ED. WESTERN HORTICULTURIST:—There are very few old orchards in this part of Jasper county, and of these only one was injured by the severity of last winter, and that one is past all redemption. Other orchards planted on or about the same kind of soil, with nearly the same aspect and exposure, are uninjured. All of the old orchards are planted on cleared land (formerly timber and bush); soil thin, and clay within eighteen inches of the surface, with no protection nearer than from twenty rods to a half mile. The damaged orchard has been murderously pruned within the past two years, and a crop of small grain was raised among the trees in 1872. The other orchards are in sod, or left to grow up in weeds.

One orchard in particular, which is in a blue grass sod, is entirely exempt from injury in every particular, and it never produced a larger crop of fruit than this season. I leave you and others to draw your own conclusion.

Of the young orchards—those unprotected seem to have fared better than those which were otherwise situated. A near neighbor of mine has an orchard of four hundred trees, which is protected by a White Willow hedge on all sides. That orchard suffered considerably last winter, and this season has blighted to death. Even a few yearlings, grown from root grafts among the trees are also blighted; soil deep prairie and sloping to the south and east. Several other orchards standing on open prairie do not show bad effects of the winter to any extent, and one in particular on a hill-side, pitching steep to north, has passed through the winter sound.

Early Harvest, Red Astrachan, Red and Sweet Junes, Oldenburg, Chenango, Benoni, Fameuse, Ben Davis and Rauls Janet have fruited well this season, while Northern Spy and Yellow Bellflower, thirteen years planted on clay soil, hung fuller than I ever saw before.



A Desirable Apple.

EARLY in September, we received specimens of an apple from Mr. E. E. Brown, Onslow, this state, which he calls the Summer Harvey. The fruit was past its prime, but so far as we could judge, may be classed *very good* in quality. Taking into account, also, the good character of the tree (as given by Mr. B.), the size of the fruit and its season, we should think it valuable. With the exception of the Oldenburg, all our early summer apples are below medium in size. Size more than quality takes preference in the market now-a-days. Let 'em have the big apple. Mr. Brown writes :

"I sent to Springfield, Vt. (my birth-place), for the eions of this apple. The trees have stood upon the old homestead for some seventy years. But when I was there eight years ago, they looked as though they would soon succumb to old time. Younger trees in the neighborhood are bearing, and it is the favorite apple. I supposed for a long time that this apple was the E. Harvest, but when I got trees of the Harvest, I at once discovered a difference. The Harvest with me is a poor bearer, the Harvey is one of the very best. The fruit is also nearly double the size of the Harvest. I have one tree-top grafted—one-half with the Harvest, and the other half with the Harvey. The latter half bore a good crop this season—the former not a single specimen."

The Martha Grape.

ED. WESTERN HORTICULTURIST:—I noticed in a late issue of your journal, an inquiry about the Martha Grape, and think I can answer the query to the satisfaction of all.

It has always been satisfactory with me, and this season it has done even better than usual. Side by side with the Concord, and in fact in the same row, for some were grafted with Martha on the Concord, it bore a fine crop of grapes, while the Concord rotted fully nine-tenths. It was ripe when the Concord was not yet fully colored. The bunches get larger as the vines get strong.

As Mr. Elliot lately said, it is about the most valuable white grape we have, all things considered. Of course it is not equal to Maxatawny in quality, but then it is hardy and reliable, while the latter is not. That we may have a better one soon, is very likely, but as yet it is not in our knowledge. The next best white thing coming, is a seedling Taylor in this vicinity, which bids fair to fill the bill of a white wine grape in every way reliable; the old Taylor not being productive enough as a rule, although with me it bears abundantly.

My Martha and Taylor brought me 10 cents per lb., while the Coneord, scarce as they are, bring but $5\frac{1}{2}$ cents, for wine of course. I did not sell any for table use.

Bluffton, Mo.

S. MILLER.

Grimes Golden Apple.

ED. WESTERN HORTICULTURIST:—There appears a question about the hardiness of this apple. As I no doubt planted the first trees of the Grimes in Iowa, it may be presumed that I should know something about its hardiness. I planted my first trees in 1850. They were not injured by the winter of 1855 and 1856, while some other kinds near them were badly damaged. Last winter did injure my old trees some, in common with others.

Four years ago I planted one hundred each of Grimes and Ben Davis. A few trees of each were killed last winter, the main cause of which I think was fall drouth. The balance are flourishing. I think the Grimes as hardy as any variety I have tested.

I got my first Grimes Golden cions from Samuel Wood, of Jefferson county, Ohio. Afterwards I went to Thomas Grimes in Brook county, Va., and cut cions from off the original tree.

Vincennes, Lee Co., Iowa.

JOHNSON MEEK.

APPLE BLOSSOMS.—There is a peculiarity in the flowers of apple trees which I have not heard mentioned by observers or noticed in books. Each flower bud almost invariably produces a cluster of six flowers, one of which is a robust flower in the center of the cluster, and this flower is nearly pistillate; in a circle around this are the five others, which are more feeble and a lighter shade of color than the center one; these five are nearly staminate, and attached to the side of the little bulb, while the base of the stem of the pistillate flowers in the center, and these five drop off as the center one matures into an apple. This fact is a pleasant one to investigate; perhaps some good may come of the investigation.—*Mark W. Stevens in N. Y. Trib.*

Clapp Favorite Pear.

IT would appear from the many flattering reports, that this pear is likely to become a general favorite. Reports from all quarters speak highly of it; we have, this season, seen it upon the tree in our rich western soil; in the region of Boston, and on the rocky hill-sides in New Hampshire. In all these localities we found both tree and fruit alike—the fruit magnificent in appearance and quality, and the tree a model for health and growth; it seems to be at home everywhere—in all soils and situations; equally upon the rich clay and alluvial soils of the West, and upon the sterile soils of New England. H. Hendrichs, Ulster Co., N. Y., says of it:

"I have now fruited this variety three years on my grounds here on the banks of the Hudson, and I think no other pear grown this season has given me pleasure and satisfaction so great. It is the most beautiful grower I ever saw; nothing can equal its dark, vigorous, luxuriant branches, and massive, glossy foliage. It is a beautiful tree, and well organized against blight, mildew and kindred affections. My trees are all standard, and now six years from the cion. Some of them, besides maturing two or three crops of fruit, have attained an enormous growth.



APPLE CROP IN MINNESOTA.—June 23, Mr. John Hart, of Winona, writes us concerning the fruit prospect in that region: "I am sorry to say that the hopes of a fair apple crop in Minnesota this season are blasted; May 24th, apples and pear trees were in full bloom and promised well till the 29th, when we experienced a heavy fall of rain followed by a heavy frost on the morning of the 30th, which killed two-thirds of the trees. Sorts hitherto considered both hardy and tender, fared alike, for Duchess of Oldenburg did not seem to come through the freeze any better than varieties considered tender. I have four trees that escaped unhurt, I do not know the variety, but think they are the Early Pennock. If my life is spared till the apples are ripe, I shall surely send you a few specimens so as to learn from you of what variety they are—for I think after passing through the trying ordeal of the last winter and spring freeze, it must be of a sort that will do to tie to."

REMARKS—By all means send us specimens of the fruit, and in good time—such exceptions in the general destruction of trees should be known.



WHITE WINTER PEARMAIN.—Concerning the scabbing of this apple, Mr. Henry Walton, nurseryman, at Malvern Station, Mills county, writes us: "So far as I know, the White Winter Pearmain, grown on prairie soil in this county, does not scale, but where grown on timber soil is almost worthless. Is this the case elsewhere in the State? I should like the observations of others on this point."

"I have seen some apple trees planted ten years ago, did well until two years ago, when they began to die in the top. The extreme ends of the limbs died the first year. Last year the disease extended down to the body, and in some cases the body went also. Is this the blight?" You needn't call it any thing else.



Editorial Notes.

Subtropical Gardening.

Very fine examples of this style were seen this fall, by the members of the American Pomological Society, who visited, by invitation, the residences and grounds of Wm. Gray, Jr., and H. H. Hunnewell.

In front of the greenhouse, at Mr. Gray's, were quite a large number of beds along the paths, planted with rare and novel varieties of geraniums, cannas and ornamental grasses.

One bed, circular, consisted of a brilliant, beautiful flowering geranium—the *Pink May Queen*. Another was planted with the Chrystal Palace Gem, with scarlet blossoms and white variegated foliage. Quite a curiosity in gardening was it to see many of the beds edged with a strip of ivy, about a foot wide, growing low over the soil.

One bed, perhaps the most brilliant of all, consisted of the *Gen. Grant Geranium*, edged all around with the *Golden Pyrethrum* as a border.

In another bed, perfectly circular, and ten feet in diameter, were cannas of various sorts, with the *Achyranthus Verschaffeltii* as border.

Another bed, ten feet wide by twenty long, was made up of solid mass of Achyranthus, then a border of striped grass, while in the center rose one single stem of tall and graceful grass, the *variegated Pampas Grass*.

Still another bed, circular, and about ten feet in diameter, had its soil carpeted with the *variegated Abutilon (vexillaria variegata)*, out of which rises, in the center, cannas and caladiums.

In the triangle, near the greenhouses, were fifteen beds of different sizes, beds a perfect mass of Mountain of Snow Geraniums.

One bed consisted of Gen. Grant Geranium with the pyrethrum as border.

Another bed has for its border the coleus, and variegated geraniums in the center.

In the little greenhouse were noticed many pots of ferns, one of which we think is a new and rare species of the "Adiantum."

A pretty feature there attracted our notice, which we have never seen elsewhere. The sides of the walls of the house were lined with moss, kept moderately moist, and supported by wire rods, crossing frequently like diamonds before it. In this space of enclosed moss was planted and growing Sellaginella or Ferns, one of the prettiest of which is the Silver Fern.

The idea is a most unique one, and very feasible, as well as successful.

The Centennial Horticultural Society.

The purposes for which this society was organized, was to take such preliminary steps as might be necessary for the management of the Horticultural Department of the Centennial Exposition, and also for the purpose of organizing a National

Horticultural Society for centennial purposes, to aid the Commissioners in this part of the great exhibition in 1876. The meeting was mainly for the purpose of obtaining an expression of opinion from prominent horticulturists and gentlemen from different parts of the country as to what is best to be done in relation to the matter under advisement. We read that it is the intention to have a grand horticultural garden, with model houses, for the display of plants of all kinds, and also a large and convenient conservatory handsomely fitted up for public receptions, etc. After some preliminaries, a committee, with the Hon. Marshall P. Wilder as chairman, was appointed to select officers for a permanent national organization, and they, in due course, presented the following report, which was adopted :

" 1. This association shall be called the Centennial Horticultural Society.
 " 2. The chief object of this society shall be to aid the United States Centennial Commissioners in the preparation of plans for the Horticultural Department of the Centennial Exposition, the planting of the horticultural garden, the construction and management of horticultural houses, etc.

" 3. The officers of this society shall consist of a President, five Vice-Presidents, a Secretary and Treasurer, who shall hold their offices until others are elected.

" 4. There shall be elected an Executive Committee, to consist of twenty-five members, who shall act, in conjunction with the Centennial Executive Committee of the Pennsylvania Horticultural Society, as an Advisory Board, to consider and recommend to the Centennial Commissioners such plans for the Horticultural Department of the great Exhibition in 1876, as in their opinion may be best adapted to that purpose.

" 5. Meetings of the Executive Committee shall be called by the chairman when required and when duly notified; five members shall constitute a quorum for business.

" 6. One member in each State and Territory shall be appointed by the President, to act as chairman of the State Committees, and these chairmen shall have power to select and appoint any number of horticulturists in their several States and Territories to act as members of the State Committees. The duty of the State Committees shall be to collect information and suggestions as to the wishes of horticulturists generally in regard to the Centennial Exposition, and to report such information, plans, and suggestions to the Executive Committee.

" The American Pomological Society being the acknowledged authority in our land in relation to fruits, with regularly constituted officers and committees in every State and Territory in the Union, and having voted to hold a session in connection with the Centennial Exposition in 1876, is hereby authorized and requested to co-operate with the Centennial Horticultural Society."

Permanent officers were then chosen, consisting of Patrick Barry of New York, President; A. W. Harrison of Pennsylvania, Secretary; W. H. Hacker of Pennsylvania, Treasurer; and six Vice-Presidents, and an Executive Committee of twenty-five members.

Wanted a Working Horticultural Society.

There is room for yet another; with due respect to the honorable name and object of the American Pomological Society, likewise to the officers of the temporarily organized Centennial Horticultural Society, we speak distinctly in full sympathy with the majority of our eminent horticulturists, *the bill is not filed yet.*

We want and must have a *National Horticultural Society*, true to its name; organized, not for honor or a name; but to work, and discuss and spread abroad, a better and more thorough knowledge concerning *plants, ornamental trees, shrubs, flowers, greenhouse plants, gardening and landscape architecture, and lawn decorations.*

We know such a society would be popularly welcomed, would receive hearty support, enlist the good feeling of the press, and in no way conflict with the honorable objects or purposes of the old societies named above. It might hold its meetings once in two years, those years in which the American Pomological Society does

not hold its sessions; and we believe it would call in the attendance of hundreds of gentlemen, florists and gardeners, who now are in no way connected with *The American Pomological Society*, which seems to be wholly devoted to fruit.

The National Horticultural Society would have complete possession of a field to itself. And as our people need now more practical information upon lawn and garden planting, it will be doing a work of necessity and sympathetic appreciation. *Who seconds?*

Irrigation.

It seems to be an inevitable conclusion forced upon strawberry growers, *that they must begin irrigation*. The seasons are now becoming so treacherous, and periodically or entirely dry about the time of ripening of the strawberry, that the crop is either cut short from one-third to one-half, or else is totally lost. One of our best growers whose crops usually bring \$2,000 to \$3,000, lost his entire crop this year, from the excessively dry weather; and in our own experience we have lost for three successive seasons, on both strawberry and blackberry crops, from 25 to 40 per cent. for the want of rain or moisture. We think it will pay any one, whose fruit crops reach \$1,000 per annum, to make preparations to irrigate in dry seasons. Will any one tell us how this may be cheaply and effectively done?

Watermelons.

In Richmond county, Ga., this year, there were planted over 1,200 acres of land in Watermelons, the produce from which reached over \$185,000.

A Pretty Rose Garden.

A contributor of *The Tribune* describes a Rose Garden which, in his opinion, is admirably adapted to meet the wants of many flower growers. "Beds of various shapes were cut in the turf and planted according to the modern style, *i. e.*, massed and ribboned. Only kinds of acknowledged superiority were used. Ribbons of White Daily, Louis Philippe, Hermosa, Agrippina, Leels, etc., were placed side by side, affording a rich contrast in color and a perfect wealth of bloom. When we add that the fragrance was delightful, what more could be desired. Entire beds of one color were not the least attractive feature of the collection."

Mr. Hunnewell's Estate.

With beautiful Italian gardens, a very picturesque lake and fountains, lawn, garden, and fruit houses, there is nothing left forgotten or untried in landscape decoration here. In a small portion of the ground is a little series of flower gardens surrounded by a fine hedge. Within the space, two very fine flower beds attracted our notice. The first was a very large Ribbon Bed, or Border, planted as follows:

1. Pyrethrum,	4. Achyranthus,
2. Lobelia,	5. General Grant Geranium,
3. Mountain of Snow Geranium,	6. Centaurea.

The contrast of colors, white, blue, scarlet, green and red, make a brilliant picture. The second bed was, perhaps, ten by fifteen, slightly raised, and planted entirely with "succulents"—*Echeveria Metallica*, with space occasionally interspersed containing agaves and yuccas.

We may at another occasion say something of the other departments of ornamental gardening, as practiced near "The Hub."

Spiraea Palmaria.

This increases in beauty and usefulness, says *The Gardener's Chronicle*, as we become better acquainted with it. In the open border it is grandly effective, and should be in every collection of perennials.

New Shrub.

One of the finest and most remarkable hardy shrubs recently introduced into England is *Elaeagnus longipes*. It comes from Japan. It is of medium size; the flowers are produced in great profusion, and are succeeded by berries, orange in color, oblong in form, speckled with brownish scales.

A Pretty Annual.

Though rarely met with in gardens, one of the most fragrant of annuals is the dwarf and curious *Schizopetalon Walkeri*. When sown in spring it blooms in June or July, and its flowers are deliciously scented, even more so than mignonette; a few flowers in a tumbler of water being sufficient to scent a room for several days. So says the *Garden*.

The Japanese Privet.

A correspondent of the *Gardener's Chronicle* asks the question why do we not more often see the Japanese privet, *Ligustrum Japonicum*, planted in our shrubberies? "It is, in my opinion, one of the most useful shrubs in cultivation, for it will do well either nailed against a wall as a climber, or planted among other shrubs, and will make itself at home in any situation. It has also the advantage of being an evergreen, and of having very pretty foliage, while the growth of the tree is compact and shapely. It ought to be planted in every shrubbery border."

New Centaurea.

English florists have received from America (Texas), specimens of a fine new hardy perennial, *Centaurea Americana Hallii*, which is considered by *The Gardener's Chronicle*, quite an acquisition in its class. It is described as being "greatly superior to the type, for while that has pale lilac-purple florets in the new forms, they are of a deep Magenta purple. The flower heads are very large, measuring when expanded fully, four inches across. In the light soil of Mr. Thompson's garden, the plant grows from two-and-a-half to three feet high; the flowering branches are ovate-lanceolate sessile, and comparatively small, while the color of the flower head is very rich before full expansion takes place."

A Pretty Floral Contrast.

A correspondent of *The Gardener's Chronicle* describes a pretty scene of climbing vines in a conservatory: "One of the prettiest floral sights that I have seen for a long time, is the result of allowing *Tacsonia Van-Volkemi*, *Clematis Jackmanni* and *Mandevillea suaveolens* to grow together at their own sweet will. They were all in full bloom, and the plants having grown up the different rafters of a conservatory and met at the top of the house, the result was certainly a very striking contrast."

Durability of Larch Timber.

An English farmer, in examining lately an unpainted larch gate put up more than twenty years ago, found it in a very serviceable state without repair. A neighbor of his put up at the same time a larch and an oaken gate post and found the larch post to last the longest.

New Raspberry.

Specimens of a new variety, entitled *The new Hybrid Mammoth Crimson Raspberry*, from Dr. E. R. Maxson, Adams, N. Y., have reached us. Being preserved in alcohol we can judge only of form and color. The berry is large, nearly like that of the Knevetts Giant; pale red, seems to be firm, and the leaf thick and tough. The Doctor has written a special article concerning it, and appears on another page.

Thanks.

We are indebted to C. W. Idell, for sundry boxes of grapes of Martha variety; and to Dr. S. J. Parker for specimens of his new seedling, the *Ithaca* white grape.

The Iris.

It is the fate of many good plants to get set aside for novelties not near as good. The Iris has been one of these unfortunates. The varieties are very numerous, and there is no flower capable of giving more interest than a collection of these. They flower as the Hyacinth goes out, and are excellent plants to go together with them.—*Gardener's Monthly*.

The Jardin des Plantes, Paris.

This garden has become since the war the most fashionable resort in Paris. A large collection of new and rare shrubs has just been imported from Algeria, and are now being arranged in the great Conservatory. Two new reading rooms are to be added, one of these to contain a complete scientific library.

To Destroy Red Ants.

Naphtha is mentioned as being a sure remedy; try it.

Plant for Table Decoration.

The beautiful half hardy Japanese shrub, *Enonymus japonicum amer variegatum*, is recommended as forming a very chaste plant for table decoration. It is described with much enthusiasm by an English gardener, who says: "With us the *Enonymus* almost vie with the Crotons in the brilliancy of its finely marked foliage, glowing with bright yellow and green."

Big Shipments of Grapes.

In one month, Vineland, N. J., shipped, in round numbers, 336,000 pounds of grapes.

Keeping Winter Pears.

At the winter meeting of the Ohio State Horticultural Society, at Zanesville, Mr. Bateham explained Dr. Ayer's successful method of keeping winter pears out of doors during the winter. This is simply to gather the fruit when mature, or before sharp frosts occur, and lay it in piles of one or two bushels each, not over six inches in depth, upon smooth grass near the house, and under the shelter of a tree, an evergreen preferred; then cover with forest leaves five or six inches thick, and throw some sticks or brush on top to prevent the leaves from blowing away and keep small animals off. Leave it thus till hard freezing weather sets in; then take off the brush or sticks and cover the fruit and leaves with old coffee sacks or carpet, the better to exclude light and air, but not to exclude wet nor frost, indeed, the more freezing the better. As the fruit is wanted for use bring some into the house, and if frozen let it thaw in a dark cellar, kept closely covered up, and then keep a few days in a warm room till mellow.

Early Beatrice Peach.

It is now discovered that this new variety of peach, concerning which fruit growers anticipated rich prospects, is considerably injured by the curculio. Colonel Wilkins, of Kent county, Md., who has a very large peach orchard, says that the Early Beatrice Peach have all fallen from the sting of the curculio.

Hardy Ornamental Trees.

Mr. J. B. Garber, of Columbia, Pa., says that in his locality, last winter, where every species of vine, tree, and shrub suffered severely from frost and cold, some trees brought from the South lived uninjured. The *Magnolia Macrophylla*, the *Salisburia adiantifolia* and the *Virgilea lutea*, were not in the least affected. Of Arbor Vites, the Japan lived, while the Chinese died.

A Plea for the Ailanthus.

W. D. Brackenridge, of Maryland, thinks it worth while to put in a few words in favor of that badly abused tree, the *Ailanthus glandulosa*, but more commonly known as the Paradise tree, or tree of Heaven, and right here we are ready to admit its faults; the first of these being a tendency or disposition to send up suckers from the roots, to the great detriment of sober-kept grass plots and pave-

ments, but the next and crowning evil of all is the offensive odor emitted by the flowers of the male tree, which bears erect, greenish spikes, while the female variety is not in any way offensive in the smell of its flowers, which are followed by large and somewhat pendant bunches of flat seed, and these are withal somewhat ornamental, and any individual of taste will admit that the long pinnate, deep green foliage of either sex, constitutes them invaluable subjects of great beauty in the formation of large groups of trees on a lawn, imparting thereto an oriental and tropical aspect. Now our advice is, to discard the male and adopt the female variety, as both are easily propagated by cuttings of the roots. The wood is close grained, very heavy and susceptible of taking on a fine polish.

Vinegar from Watermelons.

A correspondent of the *Agriculturist* remarks that, perhaps it is not generally known that a very fine white vinegar can be made from the juice of watermelons. We had a very great quantity of melons last season, and, after we had cut out their crimson cores for eating, scraped the shells, from which we gained a large amount of juice. This we carefully strained, and put into jugs with small glass bottles in their mouths. We set the jugs out into the sun, and in time had a fine flavored, clear, strong, white vinegar. The vinegar at a certain stage will be very bitter, but, when perfected, loses this and acquires true vinegar taste.

Tree Lemon Verbena.

The London *Gardener's Chronicle* calls attention to the pretty effects which can be had from the common Lemon Verbena when trained as a standard. The wavy spikes of flowers are very graceful and the odoriferous character of the plant will always make it a favorite in any form.

Congress of Rose Growers.

At the meeting of the Congress of Rose Growers, held this summer, at Lyons, out of fifty seedling roses shown, the following four were selected to be named and certificated:

H. P. Madame Vaugert (Lacharme), a fine large flower of the Victor Verdier race; color, clear salmon flush. A fine rose.

H. P. Captain Christy (Lacharme), light salmon, petals edged with white, a new and fine distinct habited kind.

Tea, Shirley Hibberd (Levet), a small Tea, of the Madam Faleot race, so valuable for florists, light salmon buff, beautiful in the bud.

Tea, Marie Guillet (Guillet fils), a fine white, with large outer petals, which promises to make fine show roses.

Asters as Decorative Plants.

The *Florist and Pomologist* says that the perennial asters, sometimes termed *Autumn daisies*, furnish some most valuable decorative plants for the open ground during autumn. *Aster Amellus* is one of the best of them, bearing plenty of flowering stems numerously branched at the top, the flowers *violet blue*; neat clumps of this dotted about shrubbery borders, or at the back of mixed beds, form most welcome masses of a very acceptable hue of color in our gardens, right up to November.

A violet-colored variety of *A. Amellus*, named *bessarabicus*, is a good decorative plant also.

Sap.

At a recent meeting of the Belgian *Cercle d'Arboriculture*, one of the professors told his audience of horticulturists that *sap does not circulate*; and another maintained that there is *no such thing as sap*.

Wonderful is science,—by and by some old *Herr Professor*, will make out we don't need *heads*; and some old fool will be ready to go a step further with such follies.

The *Gardener's Chronicle* while admitting there are such things as currents within the plant, yet says : " Scientific men have for some time known that the old notions of an upward current followed by a downward current, like the flow and return in hot-water pipes, required considerable modification ; and it was to correct this notion that the statements in question were made."

Venango Grapes.

A new grape with this name has originated in Oldham County, Ky. Fruit is described as being large, about the size of the Concord, bunches large and compact, flavor sweet, about like that of the Delaware, color light amber, skin very thick. Mr. G. W. Ditzle is the possessor, growing it in his vineyard upon the Ohio river, about ten miles north of Louisville. He says it sells readily at \$7 to \$8 per box. Received a " Sweepstakes premium " over all others, at Louisville fair of 1872.

A Good Peach Crop.

John Horsey, of Sussex County, Delaware, has an orchard of 100 peach trees (set out in the fall of 1868), from which he picked and delivered this season 460 crates of excellent peaches, realizing \$1.30 per crate (purchasers finding the crates), or a total of \$598 from a single acre.

Curiosity in Apple Growing.

An apple tree in Blackstone, Mass., is attracting much local attention from the fact that two good sized apples, touching each other, have grown directly from the trunk, a few feet above the ground, and so close to the bark that it is difficult to distinguish any stem.

Climbing Plants for In-Door decorations.

A very happy hit upon this subject which we appreciate, is made by a horticultural correspondent of *The Journal of the Farm* :

In-door Climbers.—There is nothing which will do more to beautify and give a home appearance to a room, than a few nicely arranged climbers, properly trained over windows, picture frames and glasses. Many seem to have imbibed the idea that such plants require great art and skill in their production and proper treatment, but such is not the case, for no plants are more readily taken care of than these. My favorites are the Maurandias, and particularly the M. Barclay vine. If raised from the seed, the sowing should not be later than the middle of June, but cuttings may be put into proper soil in August, which will make good plants for winter growth. Layers may sometimes be put down early in September, which, by plentiful watering, may make good plants. My best out-door specimen is now fourteen feet long, and will cover at least thirty square feet of surface. The colors vary with the variety, and are matters of taste. Next in order of favoritism comes the Cobaea scandens, or Mexican vine. There is some difficulty in starting the seeds of this plant in the open ground, though, with care, it can be done. From five seeds planted, this season, I have three fine plants for winter flowering. For filling pots for winter climbing vines a mixture of equal parts of garden soil, sand and leaf mould, is best, and occasional waterings, with liquid manure, should be given. Some succeed very well with many of the varieties of Passiflora, or Passion flower. The selection will depend upon taste as to color, but my favorite would be P. Cerulea, or P. pernissa.

A Cure for the Cabbage Worm.

A Pennsylvania lady having heard of the noxious influence of carbolic acid on various species of insects that infest gardens, a lady of that place was induced to try its effects upon the *Cabbage Worm*. For this purpose she procured a cake of soap, that had been strongly scented with the acid, and having made a quantity of suds

therefrom, she transferred it to a watering-pot, and in the early part of the day, when the *green worm* is most vigorous in its movements, she gave several garden plots of cabbage a sprinkling. These were examined soon after, and a number of dead worms were picked from the leaves. The operation was repeated next day, and from careful observations made, it is believed the leaves of the plants, wherever the solution has been fairly tried, have been cleared of these pests.

Evergreens Among Pear Trees.

Hon. E. H. Hyde, Vice-President of the Connecticut State Board of Agriculture, planted a number of small evergreens in a circular form around some pear trees, simply for ornament, intending to keep them down in the front of a hedge, and to allow the pear trees, "for effect," to appear above them. The plan was neglected after a while—as many such plans are—and the evergreens soon outstripped the dwarfs, and towered up above and nearly encircled them. It came to be noticed after a while that while the pear trees away from the evergreens were irregular bearers of rather inferior fruit, those within the circle were almost invariably prolific, and the fruit was of superior quality. There was no other apparent cause for this result than the influence of the evergreens, hence the inference in favor of protection would seem to be a just one.

This discovery, however, is not a new one. The influence of shelter belts on fruit trees, as well as on farm crops, has long been known and taught by enterprising horticulturists, but like other improvements not yielding immediate revenues, people have been slow to adopt the plan. There is not a particle of doubt as to their good effects both for shelter and for beauty. An orchard of any kind interspersed with them would, without doubt, yield better returns, even with one-quarter or one-third the space given to evergreens. Their pyramidal shape makes the shade they cast comparatively small, hence that is a slight objection. If inclined to occupy space at the expense of necessary convenience, they can be clipped, headed back or sheared into almost any form, and their density of foliage only be increased thereby. If largely planted over the country as screens, shelter belts, or only interspersed here and there through orchards and farms, they would not only exert a special protection on adjacent orchards, and vastly beautify the landscape, but would effect a general amelioration of the climate, which would be a universal benefit. The culture of evergreens is only in its infancy as yet, and every fact or incident tending to promote taste or inquiry in that direction may justly be regarded as a public benefit.

Germination of Seeds.

Some curious statements have recently been published in regard to the extent to which the germination of seeds can be facilitated by chemical agencies, especially by ammonia and oxalic acid. By placing them in a solution of the latter substance, they will begin to germinate within one or two days, even after having been kept for forty years, and are then to be planted out in the usual way. Coffee seeds, which are proverbially hard to start, are best forwarded by placing in a covered vessel, containing equal parts of water and of spirits of sal ammoniac, at the ordinary temperature. At the end of the twelve hours the roots will be found to have started, and even the young leaves can be discovered by careful inspection. In 1834 wheat was exhibited to the German Scientific Association, raised from seed found in an Egyptian tomb, 2,000 to 2,500 years old. This had been soaked for a considerable time in fatty oil before planting.

Growing Perennial Phloxes.

The Agriculturist recommends flower lovers to observe one precaution, "*not to have them too crowded*," as they will mildew, and by the time the flowers are ready to open, the foliage becomes unsightly.



FERN HOUSE AT HILLFIELD.

THE Horticulturist

HENRY T. WILLIAMS.

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Cranberries.

CANBERRY culture for a few years past has been fully tested, and entered into with strong enthusiasm. In some places their cultivation has been quite a success, in others a complete failure, until, by experience, they have overcome the difficulties they encountered in their first efforts. It may be of use to those who wish to raise cranberries to know the difficulties they have to encounter, as well as their success. About twelve years since six acres were taken up that had been wet and covered with bogs and brush ; it was drained, cleared of roots, and made smooth (soil clear peat) without sand ; the vines set in rows about two feet apart and kept clean for two or three years. They covered the ground with a rank growth of runners eight to twelve feet long, with very few fruit buds. The following season they grew in the same way and formed a mat several inches through ; a lease of the ground was taken for ten years, on shares ; during that time the average crop was not over 100 bushels, except one year, when there was gathered about 500 bushels ; two years since it was not flowed, and nearly all the plants died except where a small part had been sanded the year previous and new plants set, which have done finely, and this year they are bearing a crop. So much for the failure.

A portion of these vines with other portions of the ground has been covered with pure sand two or three inches thick, and new vines planted out and have grown finely, with a short bearing stem. Those vines this season are full of fruit. Pure sand should be used ; where there is any soil with it weeds and grass grow more freely and largely increase the labor in keeping it clean. On this plot there have been a number

of varieties planted out which are distinct in their growth and habit. One that is most marked is the Mansfield Creeper. It was found growing in Mansfield, Conn., and transplanted to a cranberry bed; the original vine the next year was destroyed. In its new position it was found to be entirely different in its growth and habit from all other varieties — it seemed to creep over the ground and catch root at every joint with great freedom, throwing out long vines from ten to fifteen feet, and bearing shoots every two or three inches on *Mansfield Creeper*, the vine, two to four inches in height. It throws out fruit buds for another year. Also another shoot, as seen in the engraving, for a fresh start. It is difficult to get rooted vines to transplant, and are planted out in vines or shoots as represented above. It excels all others in size and bearing qualities and is found to be quite early. They were picked this season (1873) fifth of September. The flesh is more tender and not as acid; fine keeper; color, dark scarlet on one side, the other nearly white with a slight mottle; shape roundish oval.



Bell Cranberry.

Bell Cranberry.—This and other varieties are inclined to grow more upright, as represented in cut. When cultivated in sand the vines throw out runners which take root and throw up bearing shoots, the bud starting from the end of the vine or shoot in the fall, in the spring throwing out slender bearing stems with fruit, as shown in cut. Also a bearing stem for fruit next year. The fruit is early and of good size and is a prolific bearer. They can be picked for use very early, even before they are quite matured, and continue long on the vines; even after the water is let off in the spring they will be superior to fruit picked earlier. They will bear the fruit better than any other variety, and are adapted to moist or retentive upland soil. The color is a very dark red or nearly black when fully ripe, but they often vary in shape

and color, sometimes quite a light red and egg-shaped on different soils, as grown on Cape Cod and other localities; but their bearing and ripening qualities are the same.

Mottled Bell—large size; color cherry red on white ground, beautifully mottled; good bearer; medium ripening qualities, and extra keepers.

Cherry Cranberry—medium to large size; round shaped; bright red color; good bearer; late in ripening and best adapted to moist soil, and not as well adapted to general culture as other varieties.



Cherry.

Bugle Cranberry—one of the earliest to ripen;



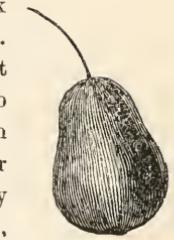
Mottled Bell.

medium to large size: good bearers and good keepers; color dark scarlet. Cranberries of each variety vary in size, shape and color.

The most successful culture of the cranberry is on muck or peat covered with pure sand two or three inches, or more, if necessary, to level the ground, with a perfect underdrain to bring the water within ten or twelve inches of the surface. Another very important matter is to have an overflow under control, so as to let on or off in a very few hours. In case of drought or worms, it can be flooded at once, while the vines are growing in flower or fruit; twenty-four hours flow *Bugle Cranberry*, will not hurt them.

Milford, Conn.

F. TROWBRIDGE.



Influence of the Stock on the Scion, and vice versa.

Essay by Josiah Hoopes, for the American Pomological Society.

BOTH theory and practice teach us that the relationship existing between the root and the top of a tree cannot be impaired to any great extent, by any artificial intervention of man. The very moment that an inserted bud or graft commences to granulate and then unite, that moment the two parts of the embryo tree struggle, as it were, for the mastery. That is, certain idiosyncrasies inherent either in the branches of the one, or the roots of the other, will form a leading feature in the mature plant. Abundant proof of this is afforded by examining the roots of nursery-grown apple trees, whether budded or grafted. Take for instance some well-known variety, as the *Bellefleur*, and the roots will be found uniformly long, slender, and very fibrous; other kinds will prove exactly the opposite. If we place a graft of some well marked variety upon any ordinary stock, say five or six feet high, in a few years certain peculiarities of the bark will be found extending down from the branches to the body of the tree; as is instanced in the *Newtown Pippin* Apple, and *Van Mons Leon le Clerc* Pear. Another curious feature respecting the influence of the scion upon the stock, is noticeable in some of the so-called "sports," or variegated leaved plants.

During the past season, a Mountain Ash, upon which was budded a variety with variegated leaves, commenced to push forth young shoots from the main body of the tree, below the point where the bud was inserted. In every case these had variegated leaves. Now, in view of the fact that these *adventitious* buds were there in advance of the original variegated bud, the presumption is, that they were created green, and their normal condition yielding to the controlling influence of the new branches, caused the change to occur by the flow of sap from above.

A still more remarkable case than the one above cited, was related some time since by a correspondent of the *London Garden*. He states that he procured scions of a diseased Horse Chestnut with yellow leaves, and worked them upon strong, healthy young trees. Some time thereafter, upon examining the stocks where the scions had failed, young shoots were found down the body, bearing the identical yellow-hued foliage; and yet, where the buds originally inserted had "taken," they produced perfectly healthy green leaves.

This disease, for I hold that all variegation is in some manner unhealthy, had evidently been communicated from the bud or scion to the stock before the death of the former, and for a short time, during its vain struggle for existence, contaminated the parts below.

The Scientific Committee, of the Royal Horticultural Society of England, also records a like case with a yellow-leaved Laburnum. After the inserted bud had died, variegated shoots were noticed issuing from the stock, both below and above the inserted point. And Dr. Masters, the English botanist, has stated that an Abutilon had thrown out variegated shoots after grafting with a variegated variety, but ceased to do so after the inserted graft died.

But, in some instances, the stock exerts a marked influence upon the scion, thus showing the co-operative system in use between them. The *Gardener's Chronicle* mentions an instance of a couple of Muscat vines worked on the Black Hamburgh, in the same house with a Muscat, on its own roots. Those worked on the Hamburgh start fully five or six days in advance of the one on its own roots, although they are nearly a fortnight behind the Hamburghs they are worked on. It is a curious fact that there has never been seen any difference in the ripening season, nor any effect on the fruit.

As we stated in the commencement, certain marked peculiarities will, sooner or later, always make themselves known; sometimes it will be one thing, and again another and totally different feature assumes the superiority. The governing cause, involved in mystery as it is, to a certain extent, affords us a clue by means of which we may study a very useful lesson in plant life.

We know that all vegetable growth arises from a cell, and what is termed young shoots, leaves, blossoms, etc., are, in fact, but an accumulation of cells, which, in time, develop woody fibre and other organs. The propagator of new varieties knows that a single bud, or a section of a young branch, may be inserted in a different tree, and these will unite and produce fruits and flowers similar to the kind from which said bud or graft was taken. Now, let us inquire into the changes that occur during this growing process, or, as horticulturists term it, "taking." Between the wood and bark is where active growth takes place, and the layer of young cells found here is known as the *Cambium layer*. All growth, of whatever nature, is by cells, the origin of which is, however, at present unknown. But this cell-growth is accomplished by small protuberances, making their appearance on the walls of the older cells, and these rapidly increase, and again, in turn, assist in the formation of others, and this is carried on so long as growth takes place. Without going into a long dissertation upon the subject of cell-growth, which would form a long essay in itself, I will merely state that the question has been asked in relation to a budded tree, can the cells, at the point of union, be partly of one variety and a part belong to another? My theory is, that a cell, singly, is entirely a component part of the variety from which it originates, either from the scion or stock, and is invested with all the powers and principles inherent in that part. A single cell cannot be of two varieties, but a collection of cells, as, for instance, the *cellular tissue*, may be formed partly of both. The *vascular* or *fibrous tissue* is governed by the same laws, each separate, but the little bundles of woody tissue uniting by their outside covering or

walls, thus forms a compact mass of wood, and the bud or graft has taken, which ultimately forms the future tree.

A bud is, in fact, an embryo tree. It contains within its protective covering all the elements of tree growth, with all the organs of vegetation and reproduction intact. Therefore, when a bud is inserted beneath the bark of another plant, the cellular growth at once takes place on both sides, these unite by their outside walls, and the so-called sap commences to circulate in the inter-cellular passages from one to the other. It is, therefore, no wonder that certain peculiarities embraced in the root may be found developing in the scion or top, and *vice versa*. That the scion is enabled to reproduce its kind, is due to the fact that its young growth is merely an increase of cells already formed, and the variations alluded to at the commencement of this paper are the result of constant currents of sap flowing between the two remote portions of the tree, and at the same time imbuing the one with certain marked characters, contained previously in the other.

Thus, in a somewhat hurried, and I fear very imperfect manner, I have alluded to the influence of the stock upon the scion, and *vice versa*.

This interesting subject is by no means all theory, as many suppose, but is the result, for the most part, of close examination by means of the powerful lens. Future investigation will, undoubtedly, reveal many novel features which we now know not of, and to accomplish this fully, the patient student of horticulture is asked to join the botanist in the pleasant task.

But there is another and more popular aspect to this subject—the relative advantages of certain stocks for particular species of plants. Under this heading, we may take for example the plum worked on the peach. Prejudice and distrust, on the part of many cultivators, have done this operation great injustice. To the owner of a heavy soil, where the plum root thrives luxuriantly, peaches should be planted with caution; but, on the other hand, in the great peach districts, with a light mellow soil, the peach root will succeed far better than the plum. Peaches always make a large number of strong fibrous roots, and return to the top a vast amount of nutrition. The junction in certain varieties of plum on peach roots is perfect, and the tree is long-lived and healthy.

The testimony of some of our most noted pomologists go to show that the practice is correct, and a careful examination plainly indicates that the theory is faultless as well.

The subject of dwarfing fruit trees is not properly understood. The pear worked on quince roots certainly dwarfs the tree to a certain extent, and for a few years, but is the process caused by some inherent property contained in the quince? We think not. Once allow the pear to throw out a few roots above the point of junction, and the tree becomes a standard. The abundance of sap or nourishment gathered up by the roots and forwarded to the top, causes in most cases a larger and finer growth of fruit, thus showing that the quince is adapted to these kinds; but take an uncongenial variety, and mark the result. The fruit is often in such cases worthless. Years ago we were told that budding cherries on the Mahaleb stock would cause the trees to become dwarf. Little did these propagators know that when they annually pruned their trees, this was what dwarfed them, and not the root. The junction in

this case is always perfect, and it is a well-known scientific fact, that excessive pruning causes debility in a plant, and that, when vitality is checked, the tree becomes dwarfed, as a matter of course. Excessive growth and productiveness seem to be generally antagonistic. A dwarf tree, after the first vigorous growth is over, will, if healthy, produce good crops and mature a reasonable amount of new wood. Some certain varieties of pears, as, for instance, the Bartlett, never unite properly on the quince stock—the cellular tissue of each never seems to make a perfect union. Very many trees that we have examined under a strong lens reveal a marked line between the cell-growth of the two, and not, as is the case with other kinds, a lengthening of both cell-growths, one up, and the other down, so that it is very difficult to determine where the exact point of insertion really is. There are causes, over which we have no control, that debar us from dwarfing some varieties, but science has not yet solved the mystery.

JOSIAH HOOPES.

The Parks of Stockholm.

THE beauty of its parks is one of the distinguishing features of Stockholm. The Djurgard, or Deer Park, is singularly picturesque, from the abundance of wood and water. The circumference is about 21 miles; the ground is very undulating, and much intersected by fjords. Added to this, the oak and beech trees have attained a magnificent growth, which is really surprising in such a northern clime, where they cannot reckon on more than two months and-a-half of summer.

During this brief period of fine weather, the people lead an out-of-door life, and seem to enjoy themselves thoroughly. The *Palace of Rosendel* is in the *Deer Park*. It is an exquisite spot; the gardens are quite open to the public, who may walk round and enjoy the wilderness of flowers that bloom here in great profusion; or they may sit at their ease and admire the beautiful proportions of the celebrated porphyry vase, which is placed in the center of the lawn. The palace, which is furnished with much taste, contains some good modern Swedish pictures. There are numerous villas and ornamental cottages dotted about in the park; but as they are not walled in, or inclosed, they heighten the beauty of the scene by means of the flower and their shrubs, which contrast so well with the rude masses of broken rocks, which here and there encumber the ground.

There is also the Haga Park, another favorite place of resort, in the immediate vicinity of Stockholm. The numerous islands in this park are prettily laid out, and many parts are very rocky and broken, while others present sylvan glades, shaded by superb trees. The park of Carlberg must not be forgotten; it also contains some magnificent trees, especially a fine avenue leading to Drottningottan. The palace in this park, which was formerly a favorite residence of Charles XII, has been transformed into a military college.

There are several royal residences round Stockholm, and among them Drottingholm should be visited, as it is one of the stateliest of the summer residences of the royalty. The gardens and surrounding are very much in the French style; more artificial than beautiful. The environs of Stockholm are almost inexhaustible in beauty; for, on one side there is the Baltic, with its myriad islands, and on the other side the lovely Malar lake, which has a length of 75 miles, stretching into the heart of the country.

The Flower Trade of New York.

Cultivation of Plants Under Glass—How the Retail Trade is Supplied.

[SECOND ARTICLE.]

THE raising of flowers and plants under glass is first in importance in the consideration of the flower trade of New York. The outdoor culture, although important when considered in its relation to the trade, is the producing element, but the hot-houses are the source from which springs the great flower business of the country. The capital invested in these hot-house nurseries is very large, and new enterprises are in progress in all of our city suburbs.

The first consideration of a nurseryman is a greenhouse ; for it is in these structures under glass where all of his choicest plants are propagated and matured. These houses are, in some cases, of great size and of the most careful construction. Many of the smaller nurseries have only one house, and from this humble beginning they rise and increase until an acre or more of ground is covered with glass. The Allen nursery has a series of glass-houses one hundred and thirty-five feet square. The Siebrecht nursery at Astoria has eleven houses on its grounds, twenty by one hundred feet each, and there are other establishments of almost equal capacity around it,

The Allen Hot-houses.

At most of the more important nurseries there are houses devoted to the culture of various kinds of plants. For instance, the camellia is always given a section ; and others devoted to winter flowering roses ; plants of ornamental foliage, such as the ferns, cloeassia, fancy-leaved caladium, the leaf of which resembles Japanese characters ; the cactus and banana ; and carnations.

There is an entire house on Mr. Allen's grounds devoted to the cultivation of carnation for winter flowering, and, later in the season, to the forcing of a new series of the same variety of plants for spring sales. The smilax is at present in great demand, and one house, which appears to be given up entirely to its cultivation, contains between six and seven thousand plants, or strings as they are popularly called. As each of these strings is worth half a dollar, the income from the house may be readily calculated.

Of the roses, the finer sorts only are cultivated for winter flowering, while the great mass of mixed plants are propagated from slips, for the wholesale spring trade. Heliotropes, geraniums, English violet, pansies and a score or more of familiar flowers are also cultivated in different sections and are in demand during the season. Later, all of these plants, with the exception of some raised from seed, are brought in training for early spring sales. It is not, however, the plants which have flowered during the winter which are sold, for they exhaust themselves, and slips and younger plants are brought forward for the purpose. These houses are all heated by hot water apparatus, which is a great improvement over the old-fashioned furnace.

The Siebrecht Greenhouses.

These houses at Astoria are probably as complete in their appointments as any on Long Island. There are, as stated above, eleven houses in all, which during the fall and winter season are all filled to their utmost capacity. Three houses are devoted to the cultivation of the Bonsseline and tea roses alone. They embrace between six and ten varieties, and are most desirable for baskets and bouquets. One house is

devoted to the smilax plant, and others to the camellias, carnation, ferns and miscellaneous flowers. This nursery has about two acres for bedding out the finer plants only, the flowers of which are for the retail trade. From Mr. Seibrecht we learn that the hyacinth bulbs are nearly all imported from Holland, as the plant does not thrive here, and the tubers run out in the course of four or five years. Great quantities of these bulbs are imported annually, and potting them for spring flowering forms a large business with all nurserymen.

American Exotic and Botanic Garden Company.

The American Exotic and Botanic Garden Company, of Brooklyn, was organized in March, 1872, having for its object the formation of a winter garden, or a Crystal Palace, for the exhibition of rare specimens of the "Flora of Nature." At present the company are actively at work with their improvements, and are selling their surplus flowers, which they produce, to the New York dealers. The grounds are situated near the line of Bedford avenue and in the near neighborhood of Prospect Park. The greenhouses and other improvements are all of the most substantial character, and have been built with a view to utility as well as strength.

Section No. 1 consists of a south house, 35x240 feet long, with a cellar containing boiler-room and sections devoted to the raising of mushrooms. In this department there is a well two hundred feet in depth, with an engine and pump which raises water for the entire establishment. Connected with the south house are seven center houses, each 130x35 feet, which adjoin on the north a tropical fernery 240x9 feet.

Section No. 2 contains the viney, 240x30 feet, which is arbored inside, and completely covered with running roses; and a front house with a circular glass roof and interior balconies. This house is 240x20 feet, and is one of a series of houses which is to extend around the whole plot. The finished building is to be 660 feet front, with wings of 300 feet each. Sections Nos. 1 and 2 are heated by a powerful hot water apparatus (designed by Mr. Ogden P. Pell, the superintendent in charge), through a line of four-inch pipe which measures four miles in length. The heat was deficient during the first year, but since then improvements have been made in the apparatus, and it does its work to the satisfaction of all concerned. Two boilers are required to heat the water for these four miles of pipe, and one hundred and twenty-five tons of coal are consumed during the season.

During the present season the front or circular house is to be opened for the exhibition of camellias only. Another house is to be devoted to roses, and so on to the end of the chapter. In the center houses two lines of benches or tables have been built for the culture of tender exotics. These tables are first made as nearly watertight as possible, after which they are coated with tar paint on the inside and then filled with sand or mould, when they are ready for the plants. In one house there are already several thousand cuttings of roses started. These are intended for the spring sales. The rose stock already in flower, or to come into flower during the early fall, amounts to about thirty thousand plants. The great majority of the rose stock consists of the ten or twelve varieties of best sorts. Of carnations there are upwards of ten thousand plants. Of the calla lily, the flower of which is so much prized during the Easter season, the stock comprises three thousand plants; and

then there are the heliotrope, geranium, bouvardia, begonia, jessamine, azaleas, ferns, fuchsias in equal quantity and variety.

To go through these extensive houses is absolutely bewildering: and while one would imagine that the establishment has the capacity to supply the whole New York market, it in reality supplies only a small part of the flowers demanded by the retail trade. During the coming season Mr. Pell estimates the sales from the gardens at about thirty thousand dollars. This estimate includes cut flowers during the winter and bedding out plants for sales next spring.

Mr. Herman Viser, the gardener in charge of the growing departments of the garden, estimates that they will cut flowers this season as follows: Of carnations, from three to four thousand a day; rosebuds, from two to three thousand daily; callas, from five hundred to one thousand; ten thousand geranium leaves; and heliotropes, camellias, azaleas, English, or as they are commonly called, wild violets, in like proportion.

Demand of the Retail Trade.

None of these great producing establishments send their perishable wares to the market, but orders are received from the retail dealers daily, and are filled as nearly as possible. During the winter season the demand for flowers by the retail florists is immense, and at holiday time and Easter the orders are so great that they cannot be filled in the neighborhood of New York.—*The Evening Post, New York.*

[TO BE CONTINUED.]



The Fern House at Hillfield.

THE Frontispiece this month illustrates the interior of a celebrated Fern House at Hillfield, near Reigate, England, of which *The Gardener's Chronicle* thus speaks:

"The Fern House, of which the central portico is seen in the engraving, is somewhat T shaped. Of course it is crammed full of plants; equally, of course, they are in excellent health. This is due to the careful manner in which the requirements are studied. The house in question is not all on a level; it is upstairs and downstairs, if we may so speak. One portion is on one level, one on another. The heating apparatus and the ventilation correspond; the consequence is there are several distinct climates in one house, and in doubtful cases the plants are shifted from clime to clime, till that one is found which best suits the requirements of the case. The center of the house is occupied by a projecting bow, on which is placed a good specimen of *Blechnum corcovadense*. Here are also fine specimens of *Gleichenia flabellata*, nestling under whose shade were blooming plants of *Grifflinia hyacinthina*. In another part of the house was the curious *Tupistra*, with bunches of berry-like fruit like so many grapes."

We observe that in modern American greenhouses the preference of popularity seems to be given to Ferns, Dracæna, Marantas and Orchids — of them all, none are so easily managed, or so interesting as well as decorative as the Ferns, and even in Window Gardens the Fern Family find a congenial home, at once attractive and easily accommodated to the atmosphere of the parlor.

Were the Fruits made for Man, or did Man make the Fruits?

By Prof. Asa Gray—Essay for American Pomological Society.

THESE need not be taken as mutually exclusive propositions; for as “God helps those who help themselves,” and man’s work in this respect is mainly, if not wholly in directing the course or tendency of Nature, so there is a just sense in which we may say, “the art itself is Nature,” by which the greatest triumphs of horticultural skill have been accomplished. Moreover, I am not one of those naturalists who would have you believe that nothing which comes by degrees, and in the course of nature, is to be attributed to Divine power.

The answer I should give to the question, as we thus put it, is:

1. Some fruits were given to man as they are, and he has only gathered and consumed them. But these are all minor fruits, and such as have only lately come within the reach of civilized man, or are not thought worth his trouble. Huckleberries and Cranberries, Persimmons and Papaws are examples, taken from this country. Whether even such fruits have or not been under a course of improvement irrespective of man, is another question.

2. Others have come to man full flavored, and nearly all that he has done has been to increase their size and abundance, or extend their season. Currants and gooseberries, raspberries and blackberries, chestnuts, and above all, strawberries, are of this class.

3. But most of the esteemed and important fruits, as well as the grains, have not so much been given to man as made by him. The gift outright was mainly plastic, raw material, time and opportunity. As to the cereal grains, it is only of the oat that we probably know the wild original; of wheat there has been an ingenious conjecture, partly but insufficiently confirmed by experiment; of the rest, no wild stock is known which is not most likely itself an escape from cultivation. Of some of them, such especially as Maize, not only can no wild original be indicated, but in all probability none exists.

So of the staple fruits; of some the wild originals can be pretty well made out; of more, they are merely conjectural; of some they are quite unknown and perhaps long ago extinct.

To cite examples in confirmation or illustration of these points, to note how very ancient some of our varieties of common fruits are, and how very recent certain others—to consider how they have originated, with or without man’s conscious agency, and how they have been perfected, diversified and preserved, mainly under man’s direct care—would be to expand this note into an essay, and yet to say nothing with which pomologists are not familiar.

It would be curious to speculate as to what our pomology would have been if the civilization from which it, and we ourselves, have sprung had had its birthplace along the southern shores of our great lakes, the northern of the Gulf of Mexico, and the intervening Mississippi, instead of the Levant, Mesopotamia and the Nile, and our old world had been opened to us a new world less than 400 years ago.

Seemingly, we should not have as great a variety of choice fruits as we have now, and they would mostly have been different, but probably neither scanty nor poor.

In grapes, at least, we would have been gainers. Our five or six available species, of which we are now just beginning to know the capabilities, would have given us at least as many choice sorts and as wide a diversity as we now have of pears; while pears would be a recent acquisition, somewhat as our American grapes now are. Our apples would have been developed from *Pyrus coronaria*; might have equalled anything we actually possess from *Pyrus Malus* in flavor, though perhaps not in variety, if it be true, as Karl Koch supposes, that the apples of the orchards are from three or four species. Our plums would have been the progeny of the *Chicasa*, the Beach plum, and our wild red and yellow *Prunus Americana*, which have already shown great capacity for improvement; our cherries might have been as well flavored, but probably not as large as they now are. But instead of peaches and figs, we should be discussing manifold and most luscious varieties of persimmon and papaw, the former probably equal to the *kaki* just acquired from the far east. As to strawberries, gooseberries and currants, we should have lost nothing and gained something, as we possess several species besides the European types themselves; as to blackberries and raspberries we should have been better off than now, by the earlier development and diversification of our indigenous species. And we might have had all our finest strawberries a thousand or more years ago, these having come from our American types, *Fragaria Virginiana* with its varieties (which, as well as the old world *F. Visca*, occurs all across the continent,) and *F. Chilensis* which ascends the Pacific coast to Oregon.

Then we should consider how much earlier our race, with an American birth place, would have been in possession of Tomatoes, of the Pineapple, of the Cherimoyer and the other Custard apples, of the Star-apples and other sapotaceous fruits, of Chocolate, of Lima Beans in all their varieties, of Pea nuts; not to speak of Potatoes, Sweet Potatoes, and "Jerusalem," (that is Gira-sola or Sunflower) Artichokes; the last supplemented by our Ground-nut (*Apios tuberosa*) would have been the first developed esculent tubers, and would probably have held their place in the first rank along with Potatoes and Sweet Potatoes of later acquisition.

Among the causes and circumstances which have given to the fruits of temperate climates of the old world their pre-eminence, *opportunity* is one. How many potential fruits of value lie undeveloped in this country we know not, and more, shall never know. They have lost their opportunity. Necessity, which is the mother of pomology as well as of other invention, has been fully supplied out of other accessible, and in some cases no doubt originally better materials.

There are some, however, for which evidently "a good time is coming." Of these, our wild grapes are foremost. They have such a start already, and seedlings, whether from crosses or otherwise, can be produced and selected and reproduced in so short a space of time, that they will probably have achieved their position when the American Pomological Society holds its centennial celebration.

Blackberries, from *Rubus villosus*, are in similar case; and if due attention be paid to the Low Blackberry or Dewberry, and to the Sand Blackberry of New Jersey and farther south, the foundation for a greater diversity of excellent sorts will be laid.

As to Cranberries, already an important staple, increase of size and abundance of production are all that are to be expected. It is easier to bring about improvements

in the direction of sweetness than in that of acidity. Huckleberries, also, have probably nearly reached their perfection unassisted.

A few wild fruits may be mentioned which manifestly have great capabilities, that may or may not be developed in the future. The leading instances in my mind are the Persimmon and the Papaw,—not the true Papaw, of course, which we have in Florida, but the *Asimina* or Western Papaw, so-called. Both Persimmons and Papaws are freely offering from spontaneous seedlings, incipient choicer varieties to be selected from; both fruit when only a few years old, thereby accelerating the fixation of selected varieties into races; and both give fruits of types wholly distinct from any others we possess of temperate climates. He that has not tasted a *Kaki* has no conception of the capabilities of the *Diospyrus* genus. The Custard Apples of the West Indies give some idea of what might be made of our Papaw, when ameliorated by cultivation and close selection from several generations. I have understood that one of the veteran pomologists of the country, Dr. Kirtland, of Ohio, a good while ago initiated a course of experiments upon the Papaw, in this regard; it would be well to know with what success, and whether the breeding and selection have been continued through successive generations.

Our American plums, already mentioned, have for many years been in some sort of cultivation, and have improved upon the wild forms; but I suppose they have not been systematically attended to. Their exterior liability to black-knot and other attacks renders them for the present unsuccessful.

Finally, if pomology includes nuts, there is a promising field uncultivated. Our wild Chestnuts are sweeter than those of the old world; it would be well to try whether races might not be developed with the nuts as large as *marrons* or Spanish Chestnuts, and without diminution of flavor. If we were not too easily satisfied with a mere choice among spontaneous Hickory nuts, we might have much better and thinner shelled ones. Varying as they do excessively in the thickness of the shell and in the size and flavor of the kernel, they are inviting your attention, and promising to reward your care. The Peecon is waiting to have the bitter matter between the shell and the kernel bred out; the Butternuts and Black walnuts to have their excess of oil turned into farinaceous and sugary matter, and their shells thinned and smoothed by continued good breeding; when they will much surpass the European Walnut.

All this requires time, almost unlimited time; but it is not for those who are enjoying the fruits which it has taken thousands of years to perfect, to refrain from the good work which is to increase the enjoyments of far future generations.

Ohio State Horticultural Society.

THE annual meeting of this society will be held at Mansfield, December 10th, 11th and 12th. The friends of horticulture, in that city and vicinity, are making liberal preparations for the meeting, and a cordial invitation is extended to all persons interested in the cause to attend; also to bring or send to the meeting choice specimens of fruits—especially new or rare varieties—for examination and discussion. Dr. J. A. Warder, the president of the society, has been absent during the summer and fall, as Commissioner at Vienna, but is expected to be present at the meeting.

M. B. B.



ERRATA.—November number, page 338, 7th paragraph, for collection, read collections. Page 342, Orchards in Grass, etc., should be credited to S. B. Higgins, Baxter, Jasper Co., Iowa.

October number, page 305, for Dueberry, read *Dew*.

We wish it understood that, being so far from the printing office, we do not have the advantage of reading our own proof.

Growing Almonds.

A SAN JOSE, Cal., correspondent of the *Pacific Press* gives the following hints on the culture of the Almond:

Select from the nursery trees that have been grafted or budded on peach stocks, and those having been well irrigated and cultivated, having attained the fullest and most perfect development whilst in the nursery; on this depends success.

I am acquainted with a gentleman who purchased last winter 3,000 trees; 1,500 of which had the full benefit of the conditions I have named, the balance being worked upon almond stocks, and grown in the nursery without irrigation. This gentleman has what is known as "chapparal land" that is, land from which that shrub has been cleared; his land had been well plowed and worked, and the soil was the same in nature throughout.

When I visited the place about a month ago, I found the 1,500 which had been worked upon peach, and well irrigated while in the nursery, healthy and vigorous, having put out new shoots from eight inches to a foot in length, and with every indication of completely gratifying the hopes of their owner, while the 1,500 worked on almond, and grown without irrigation, were the most complete failure I ever saw, not a single tree being alive.

The nature of the Almond demands that it shall be planted upon high, dry, gravelly or sandy situations; putting forth its bloom as it does in February, it cannot be grown successfully on moist lands where humid atmosphere tends to increase the severity of Spring frosts.

It is obvious, therefore, taking the above facts into consideration, that a tree should have its saps and elements developed without *stint* while in the nursery, in order to give it strength to rally under the change in transplanting to which it is subjected.

Old Apple Trees.

BY WM. H. YEOMANS, COLUMBIA, CT.

ED. WESTERN HORTICULTURIST:—The question is very frequently asked, what shall be done with the old apple trees? This is more especially the case in New England and those Eastern States which have many trees on the decline. Very many of the orchards of New England are of natural fruit, the quality of many of which sinks in comparison with some of the later and more approved varieties; for this reason comes the query mentioned above. There is undoubtedly a limit to the profitable productiveness of apple trees; they may have a lingering existence with an occasional year of reasonable bearing, but beyond a certain point the vigor of a tree must be rapidly declining, and for that reason, the expediency of an attempt at renewal by means of grafting may well be questioned; for if the elements of disease and decay have once taken hold of the body or roots of a tree, although grafted from never so vigorous and thrifty a shoot, the nourishment must pass through diseased organs, and hence affect to a greater or less degree the inserted stock. Not only that, but it is a more difficult matter to obtain fruit from such old trees, that is fair and possesses the desirable qualities required, than from young, vigorous trees.

At this age of fruit-growing, there is considerable diversity of opinion as to the best course to be pursued. A farmer who is a fruit grower, and markets his fruit in a distant city, remarked that if he was to set out a young orchard to apple trees, he would as soon set out natural fruit, or trees coming from the seed, as the most highly recommended fancy varieties, and gave as reasons, that the trees were always healthy and bore profusely after coming to bearing; that they almost invariably bore every year; that, if there was no sale for fruit they could be made into cider for vinegar, of which they would make more and better than fancy fruit; that in marketing, especially where furnished to families, they preferred them for cooking purposes because they were more acid, cooking softer and with better flavor. He offered as an objection to fancy fruit, the uncertainty of its bearing, many varieties being exceeding shy bearers every other year. There is certainly very much force to this objection, and this being so, renders the attempt to improve old orchards by grafting, a movement of doubtful expediency. It is manifest that there is a gradual deterioration of the apple in New England, which can undoubtedly, in a great measure be attributed to this wholesale system of grafting and intergrafting old trees. What is it, that at the present time gives the West such a superiority over the East in her apples—yes, and other fruits—if it is not the fact, that she has been obliged to originate new varieties, which she *has* done, and which are adapted to her soil and climate?

If grafting must be done, let it be upon stocks that are young and vigorous, that have been produced from the seed; and if they can be allowed to come to bearing, so as to discover the disposition of the same, before grafting, all the better, as it would be also to take the cions from trees known to be bearing trees, because, unless this is so, upon the principle that like produces like, a barren tree may finally be produced.

It is a good thing to originate and disseminate new varieties of fruit, but while

doing so, the profitableness to the raiser should not be entirely lost sight of; and there is no variety that is a very shy bearer, no matter how fine the fruit, that can compete with a variety of profuse bearing, but of less beauty. Orchard culture is of sufficient importance to receive careful consideration.

REMARKS.—The man who would make an orchard with seedling trees in this enlightened age, must be a “slow coach.” What assurance has he of a half dozen varieties, out of a thousand trees, of any value, or when they will show fruit of any kind? On the other hand, if known sorts of grafted trees be planted, it may be predicted with certainty what the fruit will be, and the future of its coming. As for acid, in all reason, has not Duchess, Oldenburgh, Jonathan, Red June, Porter, and many other sorts enough of it to suit the palate of the most fastidious? If we had an old orchard going to decay, we would renovate it with trees from the nursery.

Pear Crop in New England.

The *Ploughman*, Oct. 11, says: This season has been remarkable for the immense production of pears. The trees are loaded in every direction. We visited an orchard the other day that yields this year over two thousands bushels, and we know of many others whose yield is nearly as great. We were glad to see the great number of new seedlings at the exhibition of the American Pomological Society. That is improvement in the right direction, and it will lead to some substantial gain. The show of pears at the exhibitions of all the County Agricultural Societies has been very fine and the interest in them is general.”

On our recent visit to New England, what we saw of pear growing in Massachusetts and New Hampshire, it appeared to us that no better section for the successful culture of the pear is to be found east of the Rocky Mountains, than in the region of Boston and the southeastern portion of New Hampshire. Fifty miles to the northeast from Boston, on the sterile, rocky hillsides of New Hampshire, we were shown as fine pear and peach orchards as could be desired, and of which we shall speak hereafter. Fortunately our visit happened in the midst of the harvest, giving us an opportunity to see the fruit in its greatest perfection, and to both see and taste.

DIDN'T PUT IN AN APPEARANCE.—*Forney's Weekly Press* thus takes to task the Pennsylvanians for not putting in a better appearance at the late meeting of the American Pomological Society: “Pennsylvania, though her orchards are generally bending with the weight of fruit, failed to put in an appearance except here and there single plates from various individuals. No wonder a general impression prevails that Pennsylvania is not a State favorable to fruit growing, and settlers go beyond for fruit locations, when no effort is made to show what she can do.”

It does appear a little strange, to say the least, that a State Horticultural Society of the standing of the Pennsylvania Society, should manifest so little interest in the exhibitions of our National Pomological Society. In life and enterprise the Pennsylvania State Horticultural Society stands second to no other State organization of the kind.

DWARF JUNE BERRY.—Our attention has been called to this fruit by Mr. B. A. Matthews, of Knoxville. The plants came from Michigan on an order for Blueberry plants, through a Davenport man, and the mistake, or rather imposition, was not detected until the plants bore fruit the present season. Mr. B. writes:

"The Dwarf June Berry, by the way, is no humbug, it bears prodigiously, and I am told sells in the Davenport market very readily for the same price as raspberries; the fruit looks more like the Blueberry than the fruit of our common June Berry. A person unacquainted with either the Blueberry or Dwarf June Berry might not discover the cheat. The fruit of the Dwarf variety is much the largest, and when ripe is a deep blue-black, while the fruit of the common sort is quite red. The Dwarf June Berry is nothing particularly new, although it is not very generally known, or it would perhaps be better appreciated—that is, among people who like the fruit of the Shaddock. The common sort is not a sure bearer in this country."

MICHIGAN FRUIT CROP.—A correspondent of the *Western Rural* thus writes concerning its abundance and profit: "One gentleman, who pays \$96 per year as rent for a house and small tract of land, informed me to-day that his sales of peaches already amount to over \$380, with about \$100 worth yet on the trees. A farmer adjoining the corporation, who has an old orchard which has not always been under proper cultivation, this year reports sales to the amount of \$1,000, with much fruit yet to ship; one farmer with but a few acres of indifferent trees gets \$500 for his crop; another \$700. Mr. L. H. Bailey has sold over 300 baskets—double the amount he anticipated, while his apple orchard, instead of yielding 1000 bushels, as I reported a few weeks since, is now sure to exceed this large amount."

VINE GRAFTED ON THE MULBERRY.—All the strange inventions do not originate on this side of the water. The *London Garden* mentions a recommendation to graft the vine on the Mulberry, as a security against the attacks of the Phylloxera, so destructive to the roots of the Grape, the Mulberry being remarkably free from the work of insects. The *Garden* recommends that the author of the remedy first ascertain whether the vine can possibly be grafted on the Mulberry, a contingency which may appear to him of little importance, but on which nevertheless the success of the plan depends. The *Country Gentleman* ventures to recommend a more certain remedy, provided it should be successful—grafting the Grape on iron posts.

A NEW CABBAGE WORM.—A correspondent of the *Ohio Farmer* speaks of a new worm that threatens destruction to the cabbage. He describes it of a pale green color, about an inch long, of rapid growth and ravenous feeders, and soon makes clean work of a field of cabbages.

WISCONSIN GRAPES.—The Editor of the *Western Farmer* acknowledges the receipt of some large grapes—some of the Delaware berries are represented as large as average sized Catawbas, Clusters of Rogers No. 4. 1 lb. 8 oz., Delaware 11 oz. Wisconsin is some on grapes surely.

Our Fruit Prospects in Minnesota.

BY PETER M. GIDEON, EXCELSIOR, MIN.

ED. WESTERN HORTICULTURIST:—Winter is here earlier than usual by fifteen days, having set in October 22, though it is possible this snow may leave before more comes, and let us have some good weather yet. But early as is the Fameuse, fruit trees were better ripened than usual at the set-in of winter, and so of all trees; never saw the leaves dropped so clean. But notwithstanding the well ripened condition of trees, the most of varieties were more or less injured last winter and not entirely recovered in color of wood, so that should the coming winter be as hard as the past one, the partially tender trees would fare bad, as it would take less now to kill them than it did a year ago to damage them.

Up to last winter there were many kinds that bid fair to do well, but are on the rejected list to-day, I fear condemned too soon, as another such a winter may not occur in the next hundred years; certain it is, its equal heretofore was unknown; yet it may be repeated and that immediately, and even frequently in the future, as effect never comes without a cause, and that cause may yet exist and continue a space of time. We know not the end, so that in planting, the most hardy should be selected as the main reliance; the partially tender set more sparingly, but not rejected entirely.

Though the past winter was a hard one, yet the blight of the last of May and first of September did us more damage than the winter, and took hardest on those that the winter least affected. The blight took earlier and later than ever before, and scarce any at the usual time of previous attacks of the epidemic, for such I esteem it to be, as much so as the cholera, of which it is only a forerunner, now on its third trip around the world.

I have no fears that the blight will tarry long with us, nor do I fear for the ultimate success of fruit growing here, though the last winter may repeat itself as early and as often as it may; for we have some varieties so positively hardy that the last winter left them as sound as if no frost had touched them. Especially was this the case with our new stock of seedlings, grown from the seed of the Duchess, Wealthy, and a large crab of our growing, the most hardy and perfect in tree of any apple or crab I have yet seen, its seedlings excepted. Our famous crab tree is surrounded by large good varieties, mostly Blue Pearmain, of which cross many of the seedlings partake in tree and foliage, and no doubt will in fruit, but none yet fruited; but seedlings from the Duchess, Wealthy, and a few from the Cherry crab that have fruited correspond in fruit to the general appearance of tree-crabs and apples having come from the seeds of each. Of those seedlings we have some 500 set in orchard and some 1,500 yet to set, three-fourths of which prove perfectly hardy, so that our chance for something good as well as hardy is hopeful, to say the least. For with only about thirty yet in bearing from our own growing of seed, the Transcendent and Hislop are left far in the rear in size, brilliancy and flavor, some of them rating as good apples, the crab brilliancy, in a superlative degree, added. The winter and the blight caused us great loss, but in time will come up again better than before; will in a few years be able to exhibit a thousand varieties of our own origin, aside

from hundreds of varieties now on trial, the best from all parts the Union. Our motto is onward; our practice at each reverse, to double the effort for the next trial; and as time develops our best seedlings, or others that are worthy, will mass the best and strike out on their seedlings, to grow yet still better, and so on, till our race is run.

FRUIT NOT A FAILURE IN WISCONSIN.—The *Western Farmer* says: “The natural fear that the Horticultural Exhibition at the Wisconsin State Fair would be a meagre one was proven unfounded. In extent and quality the show compared very well with that made in any former year. As a rule, the apples were not equal in size and general appearance to those shown in other years, but there were many exceptions. The show of grapes were very fine. Flowers, ornamental plants, etc., were shown in large numbers. The arrangement was good and the general effect produced very satisfactory.”

The show of fruit at the meeting of the American Pomological Society at Boston is in confirmation of the above, that there had been no such failure of the fruit crop in Wisconsin, this season, as reports naturally led to suppose. We are told that the collection at the Boston meeting was gathered principally from two counties only. The fact is, nine-tenths of the talk about the fruit crop west of the Mississippi being nearly a total failure is mere bosh. Apples at this time (Nov. 5) in the Des Moines market, from Iowa orchards, are from \$1.25 to \$1.50 per bushel only. Do these prices indicate anything like a total failure of the crop?

PEACH CULTURE IN DELAWARE.—We believe it is generally conceded that Delaware is the best peach-growing region in the Union. Her soil and climate appear peculiarly adapted to the production of the peach in its greatest perfection. A committee from New Jersey visited Delaware last season to investigate peach-growing in that State. Among other matters in their report, the following points are put down as essential to successful peach culture: 1. To prepare thoroughly, clear and enrich the soil for planting. 2. To give plenty of room, or plant twenty-five or thirty feet apart. 3. Not to shorten in the branches. 4. To do a great deal of work among the trees—plowing, harrowing, cultivating, allowing no grass or weeds. 5. To hunt the borers once a year in autumn. 6. No raising corn or potatoes except the first three years in the orchard, and then only provided fertilizers are applied. 7. After the third year to plant nothing, but cultivate thoroughly.

BLIGHT AND OPEN EXPOSURE.—J. S. Stickney, president Wisconsin Horticultural Society, in his last annual address, said: “Observation for the past three years has driven me, much against my will, to believe that both pears and apples are much safer from blight where fully exposed to the winds than when sheltered by trees or buildings, and for pear trees would suggest that they be planted on the highest good soil at command, and exposed to all the winds that blow.” If any protection is necessary, he says it should be to protect the trunks of the trees on the side exposed to the sun, which scalds the bark, and the thawing in winter causes the trees to crack open. This can be prevented by shading with a board or hemlock bark.



Editorial Notes.

The Horticulturist for 1874.

Since the adoption of illustrated frontispieces, monthly, we are pleased to observe the eager interest and appreciation of our readers. Probably there has never been a single volume, in the entire history of *THE HORTICULTURIST*, which contains such an excellent (we may even say elegant) series of frontispiece engravings. Printed on the heaviest tinted plate paper, they are a valuable decoration to every number; and the entire volume for the year, is, we confidently believe, one of the most ornamental we have ever issued. During the past year, orders for back volumes and complete sets have come from all quarters, beyond our ability to supply; and as Mr. Wilder himself remarked, in a recent visit to our office, "*THE HORTICULTURIST is warmly appreciated, everywhere; I am glad to see you have made it so popular, and infused into it so much enthusiasm, energy and ability.*"

During the coming year, our plans include many illustrated frontispieces of still handsomer character than any which have yet graced our pages; likewise, we are engaging the services of contributors to special departments, so that our pages may have greater vivacity and practical interest. We have so many tastes to consult and gratify, that we cannot devote exclusive space to fruits alone; but we love gardening, cottages, flowers, plants, and home adornment full as well, and we will never permit the "*joys of the garden*" to be overlooked.

We will adopt, in our January number, 1874, a manifest improvement in typographic appearance, viz.: *two columns to the page*. At present so much space is wasted and made vacant, by displayed titles, running full width across the page, that we have decided to use this space more advantageously, and fill up with more reading matter. By dividing the page into two columns, we still have room for leaded matter and open ornamentation, yet we can admit fully one-fifth *more reading*.

THE HORTICULTURIST, in its first five volumes, was published in this way, and now, after a lapse of twenty-eight years, it is convenient to return once more to the old custom.

Our readers are invited to contribute to its pages from their note-books of experience, and (to gladden the publisher) renew subscriptions early. Do not drop your *HORTICULTURIST* first, on the list of papers, in these economical times. It fills a special field, and what it does is a work of love, and sympathy, and public good.

Mark Miller still remains with us, as Western Editor, for the coming year.

Artificial Manure for Florist's Plants.

Dr. Jeannel in an experiment respecting the use of artificial manures, the results of which were contributed to the Journal of the Central Horticultural Society of France, took two plants of Pelargonium and two of Agaves, of as nearly as possible the same degree of luxuriance. One plant of each was placed in ordinary soil, the other

in sand. Water was supplied to each, and in addition a dose of mineral manure was afforded to the plants in the sand, care being taken by means of saucers, to prevent the loss of soluble salts. After six months the *Pelargonium*, in the *manured sand* was four times as vigorous, as that in the soil. Similar results occurred with the *Agaves*. When the two plants were grown in ordinary soil, with or without manure the effects were similar. The manure used contained the following ingredients per 1,000 parts:

Nitrate of Ammonia.....	400
Nitrate of Potash.....	250
Biphosphate of Ammonia.....	200
Hydrochlorate of Ammonia.....	50
Sulphate of Lime	60
Sulphate of Iron.....	40
—	
	1000

Four grammes (about a drachm) of the pulverized and mixed salts were dissolved in a gallon of water, and administered to the plants weekly. In using solutions of mineral manure for various plants, it must be remembered that the requirements of each species are somewhat different.

Plants for Drawing-room Vases.

At one of the South Kensington Horticultural shows, prizes were offered for best display of plants in vases; and the following is the arrangement of the best:

1st Prize—A small trumpet shaped vase, having three other curved trumpets rising from the same vase; this was nicely decorated with blue coneflowers (*Centaurea cyanus*), climbing Fern (*Lygodium japonicum*), and grasses.

2d Prize—A dish, out of which rose a trumpet vase, with two blooms of crimson Cactus, and two of White Water Lily, a few Fern fronds, and some grasses, prettily arranged.

Button Hole Bouquets.

1st Prize—Pretty bouquet, consisting of a yellow Rose-bud, mounted with small sprays of *Forget-Me-Not*, having amongst it on one side, one pip of *Kalosanthes coccinea*, and on the other side one pip of a pure white flower, resembling *Bouvardia* or *Jasmine*.

2d Prize—A small spray of red *Cowbretum purpureum*, backed with a piece of Maiden-hair Fern.

Mignonette in France.

One Nurseryman in the Rue Montgalet, Paris, sells every year about 40,000 pots of Mignonette. This gives some idea of its popularity among the French.

A Pretty Subtropical Bed.

At the Royal Garden, Kew, England, there was planted directly in front of the Museum a bed of subtropical plants, which attracted very general notice. The shape was that of a parallelogram, edged with Golden Feather, plated with *Nicotiana*, Maize, Cannas, Ferdinandas, Ricinas, etc.; among them were interspersed *Amaranthus Salicifolius*, *Abutilon Thompsonii*, and flowering Gladiolus. It was a blaze of color and had a grand effect.

Early History of the Tomato in America.

This is said to have been introduced into America by a Mr. Bolton, of Philadelphia. He is said to have introduced it 90 years ago, having brought the seed from South America, and distributed them among his friends in Philadelphia, who cultivated them for the singularity and beauty of their appearance, but rejected them as an esculent, regarding them as poisonous when grown in this climate.

An Ohio lady tells an amusing story of their appearance years ago upon the table at a fashionable watering place in Pennsylvania, in the form of pies, producing the

greatest consternation. No one was found so daring as to risk his or her life upon the experiment of eating them.

Cutting Down Roses in the Fall.

Mr. N. Ohmer stated at a meeting of the Montgomery (O.) Horticultural Society that in cutting down his roses in the fall he cut them to within ten or twelve inches of the ground and then covered them entirely with decayed manure, and over this placed a low covering of boards. In the Spring he removes most of the manure, and never gives them water winter or summer. The best time for transplanting roses is in the Spring.

Mrs. Pierce said that she mulched flowers late in the season with well rotted leaf mould or old hot-bed soil. Tea roses, she finds, can be kept in our gravelly subsoil with good mulching. The best way to mulch was to make a little hollow in the soil around the plant before applying it.

A Good Flower for Garden Borders.

Dr. McCarthy, in an essay read before the same society, recommends the old fashioned double May pink as the best border to beds in which bulbs are planted. Its firm roots keep the margin well defined; its dwarf habit and bright evergreen foliage make it beautiful throughout the year, while its rich profusion of lovely flowers and its unrivaled fragrance, coming as they do, just as the perfume of the hyacinth, and the radiant glory of the tulip are departing, make it in the *highest* degree desirable.

The Eupatorium as a Garden Flower.

Mary Tower, in a short floral paper before the same society says: All professional gardeners, and I may say amateurs too, are charmed by the introduction of a white flower which combines the qualities of being a profuse bloomer, hardy and effective in masses. With this fact in view, it seems strange that we so seldom see the *eupatorium ageratoides* cultivated in our gardens. It is common in all our shady woods, blooming during the latter part of August and far into September. The only objection that can be brought forward is its rank growth, therefore requiring considerable room. I know of no more effective white flower for bouquets and floral ornaments.

Germination of Primula Japonica.

English florists find that the *Primula Japonica* retains its germinating power down to the third season. Seeds which were received direct from Japan by E. G. Henderson & Son, and germinated but small numbers the first year, produced thousands freely the second year, and the same pans still produced the third year from the original sowing.

An Insect Palace.

Sir John Hill has given the following curious account of what appeared on his examining a carnation: "The principal flower in an elegant bouquet was a carnation; the fragrance of this led me to enjoy it frequently and near. The sense of smelling was not the only one affected on these occasions; while that was satiated with the powerful sweet, the ear was constantly assailed by an extremely soft, but agreeable murmuring sound. It was easy to know that some animal within the covert must be the musician, and that little noise must come from some little creature suited to produce it. I instantly distended the lower part of the flower, and placing it in a full light, could discover troops of little insects frisking, with wild jollity, among the narrow pedestals that supported its leaves, and the little threads that occupied its center. What a fragrant world for their habitation? What a perfect security from all annoyance, in the dusky husk that surrounded the scene of action! Adapting a microscope to take in, at one view, the whole base of the flower, I gave myself an opportunity of contemplating what they were about, and this for many days together, without giving them the least disturbance. Thus I

could discover their economy, their passions and their enjoyments. The microscope, on this occasion, had given what nature seemed to have denied to the objects of contemplation. The base of the flower extended itself under its influence to a vast plain ; the slender stems of its leaves became trunks of so many stately cedars ; the threads in the middle seemed columns of massy structures, supporting at the top their several ornaments ; and the narrow spaces between were enlarged in walks, parterres and terraces. On the polished bottom of these, brighter than Parian marble, walked in pairs, alone, or in large companies, the winged inhabitants ; these, from little dusky flies, for such only the naked eye would have shown them, were raised to glorious, glittering animals, stained with living purple, and with a glossy gold, that would make all the labors of the loom contemptible in the comparison. I could, at leisure, as they walked together, admire their elegant limbs, their velvet shoulders, and their silken wings—their backs vying with the empyrean in its blue ; and their eyes, each formed of a thousand others, out-glittering the little plains on a brilliant, above description, and too great almost for admiration.

Profits in Raising Crab Apples.

The Transcendent Hyslop and other improved Crab apples, have been raised with great success by R. C. Fields of Osseo, Wis. As many as 1,000 bushels have been raised in a single year, and he has never sold them for less than \$2.00 per bushel. Among the new Russia varieties being planted in the vicinity, the Tetofsky has the preference.

Prolific Peaches.

Upon the farm of Dr. Henry Ridgely, Dover, Del., is a peach tree, from which was gathered in one day this year, no less than twenty-two baskets of peaches. Another tree bore twenty-one and a half baskets. The first was of the late old Mixon variety, and was sold at Dover depot for \$1 per basket, or \$43.50 clear for produce of the two trees.

A Curious Peach.

Mrs. H. W. Draper, of Dover, Del., discovered on one of the peach trees of her place, a peach of fine large size, but curious growth. One-half had the appearance of the old Mixon variety, while the other half resembled the late Crawford. The color line was very distinct on the skin. On opening the peach the varieties separated as marked, the stone being split and a portion adhering to each half. The flesh, however, did not exhibit so strongly the distinctive characteristics of the two varieties, the old Mixon color and flavor predominating. Hybrids are of frequent occurrence in the peach orchard, but fine specimens like this are somewhat rare.

Pruning Fruit Trees.

The Kansas State Horticultural Society has been discussing pruning, and it is asserted that the best success was from low-headed trees little pruned ; in fact this is said to be proved by the very lowest orchards. Mr. Grubb, of Brown county, who has a large orchard, seventeen years old, is decidedly in favor of very low-headed trees, and he prunes none except with thumb and finger ; and the best lesson he said he ever got on pruning was from the late Reuben Ragan of Indiana, who said when he found that pruning was coming into his mind, the very first thing he should do was to throw his knife into the well.

Our Pears.

L. Van Houtte, of Ghent, Belgium, announces a new pomological volume, entitled “*Nos Poires.*” It is edited in two languages, French and English, and gives colored plates of fifty varieties, with engravings of about forty more ; probably selecting the very best of all that are grown.

Packing Apples in Plaster.

A farmer in the eastern part of Connecticut, last fall, packed some apples in plaster, filling up all the interstices with this material. Opening the barrels, on the

14th of June, he found the fruit in a wonderful state of preservation. There was not an eighth as many decayed ones as in barrels put up in the ordinary way, while the fruit was almost as fresh as when gathered.

A Fine Gingko Tree.

In the Botanical Garden, at Pisa, Italy, is a Gingko tree, *Salisburia adiantifolia*, which has attained the height of nearly ninety feet, and at three feet from the ground is nine feet seven inches in circumference. It was received from England, and planted in 1788. It is a splendid tree, and very remarkable for the rich golden color which the leaves assume before falling.

Hardy Herbaceous Annuals.

The Agriculturist remarks that those of this class, with variegated foliage, are rare. None that we have seen equals the variegated Comfrey, *Symphytum peregrinum*. It is bright and pleasing from early spring until late autumn, and never shows any signs of deterioration.

New Double Poinsettia.

A new variety has been introduced in New York, and is now in the possession of Isaac Buchanan, of this city. The flower cluster is stated to be often 14 to 18 inches in diameter, and about six inches high. In the opinion of *The Agriculturist* "it will certainly take high rank for conservatory decoration, especially as it holds its color so long, and for florists and bouquet makers, the clusters of small and brilliant bracts will be invaluable." It was discovered by Louis Roezl, who found it in a small Indian village, in the State of Guerrero, in Mexico, in May, 1873.

Success of American Vegetables and Fruits Abroad.

The Early Rose Potatoe has won a triumph even in Australia. In one place a single pound of seed produced 105 pounds in yield; another lot of two pounds of seed produced 300 weight within seven months.

Phylloxera.

In the south of France, the native varieties of Southern Grape, such as Warren, Lenoir, Jaques, Scuppernong, are entirely free from the attacks of the Grape Phylloxera. The destructive force of this disease is such, that fears are entertained that the European Wine Grapes are destined to be entirely obliterated from along the coast of the Mediterranean. An association has been formed for the introduction in the South of France, of several millions of our native Southern Grapes.

Picquet Peach.

At the fruit exhibition of the Georgia State Horticultural Society, the Picquet Peach was classed as best, flesh vinous, highly flavored, melting, stone small, and fruit of a regular and very large size, and of superior quality. The Smock and Salway were both classed below it; and the Smock particularly, was so much the lowest standard of admission in point of quality, that it was denied admission.

Preserving Cut Flowers.

A correspondent of the *Gardner's Chronicle* relates how successful he was in keeping fresh flowers for a long time. "About six weeks ago, and when flowers were not so plentiful as they are now, my wife had some choice greenhouse flowers, which she was anxious to preserve, and she adopted the following plan, which proved to be a great success: She arranged them in a vase with a little water, and placed them under a glass shade; after an absence from home of eight days, she was delighted to find them as fresh and as beautiful as when she left them. By this method the beauty of the flower is preserved for a very long time, opportunities are

afforded for a display of taste in their arrangement, and the result is always gratifying. I have now on my table two vases under glass shades which are really elegant ornaments, and which, beautiful as many of the wax flowers are, puts them quite in the shade. One vase contains crimson and white Azaleas, dark blue Cineraria, and Maiden-hair Fern; the other contains three roses, viz., Gloire de Dijon, Priveer's Mary of Cambridge, and Triomphe d' Alecone, with Maiden-hair Fern, and they are the admiration of everyone. The Maiden-hair Fern is as fresh, at the end of a fortnight, thus preserved, as when it was first put in.

NOTE.—The idea is a good one, and perhaps the duration of blooming might be still further prolonged by putting the stem of the flowers in *white sand, wet*, instead of water only.

Interest in American Horticulture.

The *Gardener's Chronicle* of London, has often published notices of Mr. Wilder's address, and in its issue of August 30, devotes 1½ column to notices of the coming 25th anniversary of American Pomological Society, with published list of essayists.

Plant for Rockwork.

An interesting plant for rockwork is recommended by the *Gardener's Chronicle*, to be "Scabiosa Parnassae." It grows in "hummocks" and has heavy foliage and pale flowers, succeeded by a feathery pappus-like calyx, which gives the plant a very distinct aspect.

A Fine Coral Tree.

In a Nursery at Dorking, England, there flowered this summer, a fine specimen of the *Erythrina Cristagalli*. It is supposed to be over 50 years old, and its stump was 18 inches in diameter. The plant bore 30 spikes of bloom.

Hathaway Excelsior Tomato.

We believe this originated in America, but know not its precise source. Nevertheless it has found its way to England, and a gardener writes to the *Gardener's Chronicle*, that "it is the most acceptable Love apple in cultivation; it is of moderate growth, flowers early, and extremely handsome, probably the handsomest of all the tomatoes, being plump and quite round, devoid of all sutures."

American Azaleas.

The *Gardener's Chronicle* says "Azalea growing" has reached as high perfection of growing in America as with us." This is given by way of compliment, in special reference to the magnificent display of Azaleas in bloom at Mr. Sargent's, in Brookline, Mass. The queen of the collection is the variety called *Azalea indica decora*, a dome shaped plant, of about five feet high, 16 feet in circumference, and bearing more than 3,000 of its superb blossoms. The plant is nearly 30 years old. The entire collection contains about 200 plants, and some idea of its excellence can be gained when it is stated that \$1,000 has been offered for it.

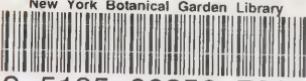
The Honeysuckle as a Standard.

A writer in the *Villa Gardener* thinks that the Honeysuckle is one of the most regularly flowered climbers in cultivation, taking rank for effect, and surpassing in many points—odor, for instance—even the gorgeous colored clematises, which are in every modern garden. As a standard, the honeysuckle merits the very foremost place in our villa gardens. "We have seen it with thousands of flower umbels in pale yellow and pale pink, decorating villa grounds in a way that no single plant in the month of July can do." It is scarcely possible, in words, to portray its extreme beauty and effectiveness. Buy a plant of it (cost not 50 cents), train or tie it to a stout stake, as one would do a standard rose; prune it not too severely, but in the way a hybrid china rose ought to be done; give it a good soil to grow in, and it needs no further attention. It will grow into a plant that will astonish, by its flowering capacity, thousands and tens of thousands who have not seen it so trained.





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